MASTER SONS ARITHMETICK,

Shewing the ingenious inventions, and figurative operations, to calculate the true solution or answer of Arithmeticall questions, after a more perfect, plaine, briefe, and well ordered Arithmeticall way, than any other hertofore published: no lesse pleasant and profitable to those which are given to Merchandizing, than all others of any Profession whatsoever. 1634

Newly set forth, with brief and easie Explanations of every Question fully wrought out.

By HVMFREY WAYNMAN, Mr. of the Lady RAMSEYS Free-Writing-Schoole in CHRISTS Hospitall, *London.*

Nothing without labour: All things with reason.



1728
1694
94

LONDON,
Printed by GEORGE MILLER dwelling in the Blacke-Friers. M.DC.XXXIV.

BRITISH MUSEUM

TO THE

RIGHT WORSHIPFVLL,

S^r. *Martine Lumley* Knight, President of CHRISTS Hospitall. The Right Worshipfull S^r. *Hugh Hammersley* Knight, Alderman of *London*, and the rest of the Right Worshipfull Aldermen. The Worshipfull M^r. *John Hawes* Treasurer, and M^r. *Richard Caswell*, and the rest of the most worthy Governors of the said Hospitall, *H.W.* prayeth for all increase of true honour and happinesse in this Kingdome of Grace, and immortall beatitude in the Kingdome of Glorie.

Right Worshipfull,

MY selfe and all that I am being due to your Worships for manifold favours to me and mine, from my first being, to this present condition of my well-being: To whom may my poore labours whatever, either publike or private, so peculiarly belong, as to your Worships, and the rest of our worthy Gover-

nours? The due and serious consideration whereof hath incited, yea commanded the humble dedication and consecration of these Issues of my spare howres to your good Worships Patronage and acceptance; the rather because it is a subject wherein you are frequently conversant, and so in its proper Sphere and Element, and under the shelter of whose favourable Tutelage it may (as I primarily aimed) passe forth to publike utility. Which hoping your Worships with the rest of my most worthy Patrons will favourably accept, together with the humble tender of my best and bounden service, I rest,

Your good Worships servant
ever to be commanded,

H. W.

TO THE

RIGHT WORSHIPFVLL,

the M^r. Wardens and Assistants of the most worthy Society of Gold-Smiths, *H.W. wisheth all desiderable happinesse here, and indissoluble happinesse hereafter.*

Right Worshipfull,

REtribution or Thankfulnesse, being the first and chiefe duty which both Nature and Religion have instilled into all creatures, and my selfe and my parents before me having beene members of your worthy Society, and long and largely obliged for ancient and modern favours; I have ever held my self bound both by the bonds of civility and piety, to study gratitude to your Worships: And now at last, my long and longing desires herein being made happie by this opportunity, I have made bold to dedicate these my poore pri-

vate labours to your good Worſhips, as a Symboll of my ſervice and deeply obliged thankfull heart, being confident (encouraged herin by long experience of your Worſhips courteſie and goodneſſe towards me) that it cannot faile of a candid acceptation, eſpecially iſſuing from ſuch a heart (as from a ſpring) which deſires to flow forth in full ſtreames of due obſervance and gratitude; and ever to reſt,

Your good Worſhips in all his

beſt ſervices to be commanded,

HVMFREY WAYNMAN.

To the Courteous Reader.

THou haſt here (*kind Reader*) a *Reviſe of* M^r. Maſterſons *accurate and exquiſite Method of Arithmeticke, a peece of ſpeciall uſe and utility, if judiciouſly underſtood; than which I know not any at this day extant in Print more helpfull (in this kind) to all ſorts: But (in regard of diverſe intricate obſcurities) hitherto too much neglected. Which, I taking into my ſerious thought and private conſideration, perſwaded my ſelfe it would be a work worthy the labour, to harrow over what he had moſt induſtriouſly plowed up, and breaking the clods to free it of its rough and unintelligible difficulties; reducing it (now) into a methodicall order, whereas in the former Editions the queſtions ſtood in a more confuſed manner, but every Queſtion being now rectified and entirely ſet by it ſelfe in its proper ſtation, and each Queſtion illuſtrated and made plaine with familiar demonſtrations (which hath coſt me no ſmall paines and labour) ſo that*

now

now every industrious Tyro and raw Arithmetician, desirous of a dexterious faculty in this famous and universally usefull Art, may with small pains and much delight (by the mercy of God) attaine a faire maturity therein. Which benefit if thou enjoyest by these my poore labours (wherein I aymed at nothing so much as publike good) give God the praise and I have all I desired: However accept kindly my hearts honest intentions; and if thou meetest with any faults (which in this kind could hardly be avoided) that have escaped the Presse, let me desire thee with thy pen to amend them, so shall I rest,

Thine in his best poore

endeavours, H. W.

THOMAS MASTERSON HIS FIRST BOOKE OF ARITHMETICKE.

Definitions.

1.

VNitie, vnit, or one is, by which every thing that is, is ſaid one.

Declaration.

Vnitie, vnit, or one is, by which we diſtinguiſh, diſcerne, know, name, or expreſſe any thing that is, to be one: as one God, one ſpirit, one voice, one thing, one ſtroke, one world, one ſtarre, one houſe, one man, one yeare, one minute, one mile, one elle, one pound, one graine, one piece, &c. infinitely.

2.

Number is, a multitude or a many of units.

Declaration.

As unit or one, is that, by which every thing that is, is expreſſed to be one: ſo number is that, by which we expreſſe what certaine quantity or multitude of thoſe things, quantities, or magnitudes we deſire to have named, knowne, or ſignified: as two Angels, three lights, ſix things, ſeven dayes, twenty

men, thirty beaſts, forty pound of money, ſixty pound weight, one hundred elles, two thouſand peeces, &c. infinitely.

3.

Part is one number of a greater number of the ſame kind: when the leſſer number doth meaſure the greater number.

Declaration.

One number is ſaid to meaſure a greater number of the ſame kind: when the leſſer is many times contained in the greater exactly: as, two doth meaſure ſixe, for that two is contained in ſixe three times exactly. Therefore two is the one third part of ſixe, &c. infinitely. Here is manifeſtly to be gathered, that the unit doth meaſure all numbers, and is a part of any number: as of eight it is the eight part, of twelve it is the one twelfth part, &c. infinitely.

4.

Part is, one number of a greater number of the ſame kind, when the leſſer number doth not meaſure the greater number.

Declaration.

When the leſſer number doth not meaſure the greater number of the ſame kind, then we muſt conceive that the unit doth meaſure the ſame greater number, and therefore is a part thereof: and conſequently, that the leſſer number is ſo many ſuch parts of the greater number, as the ſame leſſer number doth containe units. As five doth not meaſure ſeven, nor ſix doth not meaſure fourteene, but the unit doth meaſure them both: and is the one ſeventh part of ſeven, and the one foureteenth part of foureteene:

foureteene: therefore five is the five ſeven parts of ſeven, and ſix is the ſix fourteene parts of fourteene, &c. infinitely.

5.

Many times is one number of a leſſer number of the ſame kind, when the leſſer number doth meaſure the greater number.

Declaration.

This is the converſe of the third definition, for as the leſſer number is the ſuch part of the greater number of the ſame kind, ſo the greater number is, the ſuch many times of the leſſer number of the ſame kind: as ſix is meaſured by two at three times: therefore ſix is the three times of two, &c. infinitely.

6.

Reaſon is, the habitude, regard, reſpect or compariſon, that two quantities of one kind have together, according to quantity.

Declaration.

Reaſon is, that by which is conſidered, knowne, named and expreſſed what one quantity is, of another of the ſame kind: as that it is greater, leſſer, or equall. But more preciſely, reaſon is the conſideration and knowledge of the quantity or number, by which is exactly expreſſed and named, what quantity one qnantity is, of another of the ſame kind: as that it is, once the ſame, two times, three times, once and one halfe, once and three quarters, two times and one third, five times and two ſevenths, &c. infinitely.

7.

Proportion is, ſimilitude, or likeneſſe of reaſons,

and doth conſiſt at the leaſt in three termes, or limited quantities.

Declaration.

Proportion is, ſimilitude or likeneſſe of reaſons, between the quantities compared: as foure to two, and ten to five, the reaſon is two times or double in both compariſons. Proportion doth conſiſt at the leaſt in three termes, and that is, when the conſequent is taken as an antecedent to the next conſequent: as eighteene to ſix, and the ſame ſix to two: the reaſon is three times or triple in both compariſons, &c. infinitely.

8.

Quantities, having one, the ſame, or like reaſon: are in one, the ſame, or like proportion, and are ſaid to be proportionall.

Declaration.

As in the ſixt and ſeventh definitions, we give names to the habitude of quantities, and to the ſimilitude of reaſons: ſo in this we give appellation to the quantities themſelves (which are in proportion.)

9.

Arithmeticke is, the art of numbers.

Declaration.

The Art of numbers doth not onely teach to name, number, and write all things conſidered as applied to number, truly, diſtinctly and intellectively: but alſo the inventions of the mind, and the figurative and caracterical operations, by which we anſwer queſtions orderly propounded, by number, reaſon, and proportion, as well of merchandiſe and

and other daily affaires, as of Geometrie, Muſicke, Aſtronomy, &c.

The firſt inſtruction is of Numeration.

THe chiefe end looked for in this Art, is to find, manifeſt, expreſſe, and name the deſired unknowne quantity: for the attaining whereunto, we uſe to write the names of all numbers by theſe ten figures following, 1 2 3 4 5 6 7 8 9 0, having every one his proper name, ſimple ſignification, or value: as this figure 1 ſignifieth, or is called unity, unit, or one, this 2 two, this 3 three, this 4 foure, this 5 five, this 6 ſix, this 7 ſeven, this 8 eight, this 9 nine, this 0 ſignifieth or is called nothing; and alſo a name and ſignification which doth alter according to the place that they be written in: as when any of them be written or placed together, to name, or ſignifie the value of a number: then the figure furtheſt toward the right hand, keepeth his proper name and ſimple ſignification, and is ſaid to ſtand in the firſt place of that number. The figure next unto that, ſtandeth in the ſecond place, and ſignifieth there his proper value ten times. The figure next unto that toward the left hand, ſtandeth in the third place, and ſignifieth there his proper value one hundred times. The next figure toward the left hand ſtandeth in the fourth place, and ſignifieth there in that place his proper value one thouſand times. The next figure toward the left hand, ſtandeth in the fift place, and ſignifieth there his proper value ten thouſand times. And in like manner, every figure ſignifieth ten times as much as if it ſtood in the next place of that number toward the right hand. So that when many places are written or placed together, to name or ſignifie the value of a number, if I make

a pricke over the figure which ſtandeth in the third place, another over the figure which ſtandeth in the ſixt place, and another over every third figure following, ever leaving two figures betweene each two pricks: and then name or read the figure, or figures, which ſtand toward the left hand, of the laſt pricke, as if they ſtood apart from the reſt, adding to their ſignification ſo often times this word thouſand, as there are pricks from them toward the right hand, then the next three figures as if they ſtood apart from the reſt, adding to their value ſo many times this word thouſand, as there are pricks from them toward the right hand: and in like manner read every three figures following of that number: all that ſhalbe the name of the number, which thoſe figures ſo written together do ſignifie.

Examples.

74'207'537'41 ſignifieth ſeven thouſand thouſand thouſand, foure hundred thirty nine thouſand thouſand, ſeven hundred fifty three thouſand ſeven hundred forty one. I might have named for every two pricks this word million, for that is a thouſand thouſand: as here, 13'784'000'009'742 ſignifieth thirteene million million, ſeven hundred eighty foure thouſand million, nine thouſand ſeven hundred forty two. And 100'170'000'000 ſignifieth one hundred thouſand two hundred ſeventy million, ninety thouſand, &c.

The ſecond inſtruction is of Addition.

TO expreſſe the value of many numbers given of one kind, in one number, that is, to find one number equall in value to many numbers ſo given,

place

place the numbers given one under the other, that all the figures which ſtand in the firſt places, be juſt one under the other: all the figures in the ſecond places, juſt one under the other, and all the reſt every one under his like place, then adde the value of all the figures which ſtand in the firſt places together, and if they amount not above nine, write their aggregat juſt under them. But if they amount above nine, write downe onely the figure which ſtandeth in the firſt place of their aggregat, and adde the other figure or figures in his or their value (eſteemed as being apart from the other) to the proper value of the figures which ſtand in the next places, and with the number that all that doth amount unto, do as you did with the aggregat of the value of the figures which ſtand in the firſt places, or as you ſhould have done with it, if it had been equall to it. In like manner do with all the reſt, writing every figure under thoſe figures, of the which it doth proceed; and then the figures which are newly written, are called the aggregat, and do ſignifie as much in value, as all the numbers given.

Examples.

	734045		987899
	161832		888888
Facit	895877		734679
			384798
	458943		789237
	790879		945678
Facit	1249822		734566
			583219
	798456		784004
	908000		877847
	749823		46899
	847989		3238
	479886		788
	347918		66
	471103		9
Facit	4603175	*Facit*	7761815

The third instruction is, of Substraction.

TWo numbers of one kind being given to find how much the greater exceedeth the lesser, that is to know how much remaineth, the lesser number being abated out of the greater, place the lesser number under the greater, as if they should be added together, then take or abate the value of the first figure of the undermost number from the value of the first figure of the uppermost, and write the rest or remainer just under them. But if the first figure of the uppermost number be lesse in value than the first of the undermost, borrow 1 of the next figure to it, which is worth ten in that place, and add that ten to it, then from that aggregat, take or abate the value of the undermost figure, and write the rest or remainer

remainer iuſt under them: then do with the figures in the ſecond places as if they ſtood in the firſt places, ever remembring that of what figure ſoever you have borrowed one, that the ſame is eſteemed for one leſſe than it doth ſignifie. In like manner do with all the reſt one after another, and then the figures which are written under the numbers given, do ſignifie the value that the greater number given exceedeth the leſſer.

Examples.

	789456		700024
	265232		205077
Facit	524224	*Facit*	494947
	470476		600000
	198789		20006
Facit	271687	*Facit*	579994

The fourth inſtruction is of Multiplication.

TWo numbers being given of what kinds ſoever, to find a third number of one kinde, which ſhall containe the one of them as oftentimes as the other doth containe unites, place

1	2							
2	4	3						
3	6	9	4					
4	8	12	16	5				
5	10	15	20	25	6			
6	12	18	24	30	36	7		
7	14	21	28	35	42	49	8	
8	16	24	32	40	48	56	64	9
9	18	27	36	45	54	63	72	81

the

the numbers given as if they ſhould be ſubſtracted, and multiply the firſt figure of the uppermoſt number by the firſt of the undermoſt, and if their product amount not above nine, write it juſt under them, but if it amount above nine, then write onley the firſt figure of it, and add the other figure (eſteemed as being apart from the other) to the number which doth proceed of the firſt figure of the undermoſt number multiplied by the ſecond of the uppermoſt in his proper value, and with that aggregat do as you did with the laſt number, or as you ſhould have done with it, if it had been equall to it, but that the figure muſt be written in order next unto the figure laſt written, adding the other figure if it amount to more than nine, to that which doth amount of the firſt figure of the undermoſt number multiplied by the next figure of the uppermoſt in his proper value. In like manner continue til all the figures of the uppermoſt number, in their proper value, be multiplied by the firſt of the undermoſt, then do with the ſecond, third, and all the other figures of the undermoſt number, in order one after another in their proper value, as you have done with the firſt, or as you ſhould have done with it, if it had beene equall to them; onely excepted when you begin to multiply with a new figure of the undermoſt number, begin to write under that figure of the undermoſt number, that you multiply with, and then the aggregat of all thoſe new found numbers being added together, without reſpect of places, even as they are placed is called the product, and is the number which doth proceed of the two numbers given, being multiplied accordingly together: containing the one of them as oftentimes as the other doth containe unites, which in effect is a brieſe

addition

ddition of many equall numbers (of one kind) iven.

Examples.

	984723		784378
	3		987
Facit	2954169		5490646
	890084		6275024
	5		7059402
Facit	4450420	*Facit*	774181086

The order to place and worke, when the first figure or figures of the undermost or uppermost number or both together, are o, and also when there are any in the middest of the undermost.

	9678		586700
	5600		47
	58068		41069
	48390		23468
Facit	54196800	*Facit*	27574900
	324600		789040
	230		700800
	9738		631232
	6492		552328
Facit	74658000	*Facit*	552959232000

The first instruction is, of Division.

TWo numbers of one kind being given, to find how oftentimes the lesser number is contained in the greater, and also how much will remaine the lesser

leſſer being abated out of the greater as oftentimes as it can be, place the figure which ſtandeth in the laſt place of the leſſer number (that is of the divider) under the figure which ſtandeth in the laſt place of the greater number (that is of the divident) and then all the reſt in order following, but if the laſt figure of the divider in his proper value be greater than the laſt figure of the divident in his proper value, or if the divider do ſignifie a greater number than ſo many figures of the divident as ſtand over it, eſteemed as if they were apart from the reſt, write the laſt figure of the divider under the laſt ſaving one of the divident, and the other in order after it, then write in a place apart how oftentimes the laſt figure of the divider in his proper value is contained in the figure or figures that are over it eſteemed as being apart from the reſt, ever reckoning that figure, or thoſe figures, which ſtand at the left hand of the figure which ſtandeth juſt over any figure of the divider to ſtand alſo over the ſame figure; and foreſeeing that all the figures of the divider in their proper value one after another, may alſo be taken as oftentimes out of the numbers which ſtand, or ſhall come to ſtand over them, then multiply all the figures of the divider in their proper value, either beginning with the firſt or laſt, by the value of the figure which you have written apart, ſtriking out that figure of the divider which you multiply with, and abating their product from the number over it, eſteemed as being apart from the reſt, ſtriking it out and writing the remainer over it, then place the divider one figure further toward the right hand, and doe as if it were the firſt placing of it, onely excepted that you muſt write the figure which you find now, by the figure which you found laſt toward

ward the right hand, and in like manner continue the removing of the divider, untill the figures in the first places of the divider and divident stand one under another, and then the figures which are written apart are called the quotient, and shew how oftentimes the divider is contained in the divident, and that which doth remaine over the last placing of the divider unstricken out, doth shew how much doth remaine, the divider being abated out of the divident as often as it can be.

Examples.

978456 to be divided by 8.

xxx
978456(122307
888888

8793965 to be divided by 9708.

x8
5x2
66672
8793965(905
970808
97

or thus.

82
5672
8793965(95
970808
87

178094 to be divided by 83.

34
455
22779
278094(2145
83333
888

or thus.

345
22779
278094(2145
83333
888

475967 to be divided by 4763.

244
4193
5723
222590
475967(99
47633
476

or thus.

443
47290
475967(99
47633
476

The order to place and worke when the first figure or figures of the divider, of the divident, or of both together are 0.

divide

divide 984735 by 100.
quotient remainer
9847|35
divide 237891 by 9700.

5
430
237891(24
97700
9

divide 97340070 by 100000.
quotient remainer
973|40070
divide 3198740 by 49000.

1
2539
3x9874(652
49990
44

The sixt instruction is of Fractions and their Numeration.

THough unitie, unite, or one, be no number, but the originall cause of naming and numbring all numbers: measuring all numbers, but measured of no number, yet know that for the attaining to the quantity unknowne desired, (for brevity sake) we call and name, abusively, a certaine distinct, and second position of numbers, a part or parts of an unit: whereas in truth it expresseth onely, such part, or fraction, of that certaine quantity, in which the unit is first considered, as applied unto; as when number is considered, as applied to yeares, dayes, houres, pounds, ells, peeces, &c. Then that quantity,

tity, considered in that unit, is or may be taken for a number of lesser quantities, and doth, or may be imagined to containe as great a multitude of parts or fractions, as any quantity in which the unit may be considered as applied, is or may be imagined to be parted into, which fractions are expressed by a second position and consideration of two numbers, or of an unit and a number, distinct from the first position of numbers by a line drawne betweene them thus $\frac{3}{5}$ or thus $\frac{1}{5}$ &c. infinitely: where the undermost number doth shew in how many parts any one quantity so first taken is parted, and the uppermost how many of those parts the fraction doth signifie, also when for brevity we say whole numbers, or whole numbers & fractions: the meaning is, numbers by a first position applied to whole quantities, and numbers by a second distinct position from the first, applied to part, or parts of the same whole quantities: and not that there are any broken numbers, but alwayes one and the same numbring numbers, &c. Therfore a fraction being given, read first the uppermost number, that is the numerator, then the undermost, that is the denominator, adding this word part if the numerator be an unit, or this word parts if it be a number, and all that is the signification of the fraction given.

Examples.

$\frac{1}{2}$ doth signifie one two part or a halfe.

$\frac{1}{3}$ one three part or one third part.

$\frac{3}{4}$ three foure parts or three fourth parts.

$3\ \frac{11}{12}$ three, and eleven twelve parts.

$9\ \frac{75}{100}$ nine, and seventy five, one hundreth and three parts, &c.

The

The seventh instruction is of the abbreviation of Fractions.

A Fraction being given, to write the value of it with the least numbers that it can be written with: divide the denominator by the numerator, then the divider of that division by the remainer of the same, and so still the divider of the last division by the remainer of the same, untill there be no remainer, or that the remainer be 1. For if it be one the fraction given can be written with no lesse number than it is: but if there be no remainer, divide the numerator of the fraction given by the divider of the last division, and write the quotient above a line, then divide the denominator of the fraction given by the said divider, and write the quotient under the other quotient under the line: and the fraction which is made of those two quotients in value is equall to the fraction given, and is written with the least numbers that it can be written with.

Examples.

$\frac{1648}{2426}$(3 $\frac{24}{108}$. 208 (4 24 (2 208 (9

24 12 22

$\frac{1}{3}$ is equall to $\frac{16}{48}$ $\frac{2}{9}$ is equall to $\frac{24}{108}$

1004 48 256 236

$\frac{9784}{10788}$. 10788 (1 9784 (9 1004 (1 748 (2

9784 1004 748 256

20 1 4 212

256 (1 236 (11 20 (1 26 (4 9784 (2446

236 220 16 4 4444

232

$\frac{2446}{2697}$ is equall to $\frac{9784}{10788}$ 10788 (2697

4444

1

	22	53	9	4	1
$\frac{277}{599}$.	599(1	277(12	22(1	13(1	9(2
	277	222	13	9	4

2

$\frac{277}{599}$. can be written with no leſſe numbers.

The eight inſtruction is, of the bringing or reducing of many fractions under one denomination.

TO bring many fractions given of diverſe denominations of what kind ſoever under one denomination, multiply the numerator of the firſt fraction given, by the denominators of all the other: to ſay, firſt by the denominator of the ſecond, then that product by the denominator of the third, &c. ever the laſt product by the denominator of the next fraction, and then that laſt product ſhalbe the numerator of the firſt fraction given. In like manner find the numerator of every fraction given, eſteeming the fraction of the which you will find the numerator, to be the firſt fraction given, then multiply the denominators of all the fractions given in like manner together, and their product is the common denominator to all the new found numerators.

Examples.

$\frac{1}{2}$ and $\frac{1}{4}$
$\frac{4}{8}$ and $\frac{2}{8}$ in value is as much as $\frac{1}{2}$ and $\frac{1}{4}$.
$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$ 72

40. 42. 64
$\frac{240}{432}$. $\frac{378}{432}$ and $\frac{384}{432}$ are equall to $\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

Abbreviation of the former worke.

$\frac{1}{2}$ and $\frac{1}{3}$
$\frac{3}{4}$ and $\frac{1}{4}$ are equall to $\frac{1}{1}$ and $\frac{1}{4}$
$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$ 72
$\frac{60}{72}$. $\frac{63}{72}$ and $\frac{64}{72}$ are equall to $\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

The ninth instruction is, of Addition in fractions.

TO adde many fractions of one kind given together, bring them all under one common denomination, then divide the aggregat which commeth of all the new found numerators added together, by their common denominator, and the quotient is the aggregat of all the fractions given. Likewise if there be whole numbers joyned with the fractions, add first the fractions, and to their aggregat add the whole numbers.

Examples.

$\frac{1}{2}$ and $\frac{1}{3}$	$\frac{1}{2}$ and $\frac{1}{4}$	$\frac{5}{6}$ and $\frac{7}{8}$ *Facit* $1\frac{17}{24}$
3	2	40
2	1	42
Facit $\frac{5}{6}$	*Facit* $\frac{3}{4}$	34
		82(1
		48

$9\frac{1}{5}$. $8\frac{1}{4}$. $7\frac{1}{8}$. $6\frac{1}{6}$ and $5\frac{1}{3}$. 24

16. 18. 3. 20. 8

Facit $37\frac{17}{24}$

17
65(2
24

$9\frac{1}{5}$. $8\frac{4}{9}$. $9\frac{1}{3}$. $19\frac{1}{5}$. and $11\frac{1}{2}$

36. 40. 60. 54. 45

Facit $58\frac{17}{18}$.

45
90

5
235(2
90

The

The tenth inſtruction is, of Subſtraction in Fractions.

TWo fractions of one kind being given, to find how much the greater exceedeth the leſſer, bring them both under one common denomination, then ſubſtract the new found numerators one from the other, and the remainer is numerator and the common denominator, denominator to the fraction that the greater fraction given exceedeth the leſſer. Likewiſe if there bee whole numbers joyned with fractions, ſubſtract firſt the fractions, and then the whole numbers, and add both thoſe reſts together: but if the fraction which muſt bee ſubſtracted bee greater than the other, borrow one of the whole number which is joyned with the leſſer fraction, which is ever as much as the common denominator of both the fractions, and add it to the new found numerator of the ſaid leſſer fraction: then ſubſtract them as before, ever remembring that the number of the which you have borrowed one, is reckoned for one leſſer than it doth ſignifie.

Examples.

$\frac{1}{3}$ from $\frac{3}{7}$

4
3

Facit $\frac{1}{8}$

$2\frac{1}{13}$ from $7\frac{5}{8}$

65
6

Facit $5\frac{12}{78}$

$9\frac{1}{1}$ from $13\frac{1}{12}$

~~1~~ 1
12

13
6

Facit $3\frac{7}{12}$

$\frac{7}{9}$ from $1\frac{2}{3}$	$3\frac{11}{12}$ from $4\frac{1}{5}$	$8\frac{12}{13}$ from $13\frac{12}{13}$
3	12	33
9	60	33
12	72	*Facit* 5.
7	55	
Facit $\frac{5}{9}$	*facit* $\frac{17}{60}$	

Abbreviation of the worke of some of the former examples.

$\frac{7}{9}$ from $1\frac{2}{3}$	$9\frac{1}{2}$ from $13\frac{1}{12}$	$3\frac{11}{12}$ from $4\frac{1}{5}$
3	1	12
2	6	5
Facit $\frac{5}{9}$	*Facit* $3\frac{7}{12}$	*Facit* $\frac{17}{60}$.

The eleventh instruction is, of Multiplication in fractions.

TWo fractions of what kind soever being multiplied together, the numerator of the product, is the product of both the numerators multiplied together, and the denominator, the product of both the denominators multiplied together. If a fraction be to be multiplied by a whole number, multiply the numerator of the fraction by the whole number, and divide the product by the demominator of the fraction, and the quotient is the product of the fraction multiplyed by the whole number. Also if a whole number and a fraction be to be multiplied by a whole number, add the product of the whole number multiplied by the fraction, to the product of both the whole numbers multiplied together, and that aggregat is the product of the whole number and fraction multiplied by the whole number: but

if a whole number and a fraction be to be multiplied by a whole number and a fraction, multiply each whole number by the denominator of his fraction, and to the product of each multiplication add the numerator of his fraction, then divide the product of both those aggregats multiplied together by the product of both the denominators of the fractions multiplied together, and the quotient will be your request.

Examples.

$\frac{2}{3}$ by $\frac{3}{4}$

$\frac{6|1}{12|12}$

Facit $\frac{1}{2}$

$3\frac{14}{112}$ by 5

7

55|4

22

Facit $19\frac{7}{12}$

$\frac{7}{8}$ by 9 *Facit* $7\frac{7}{8}$

7

63|7

8

$4\frac{2}{5}$ by $3\frac{1}{2}$ *Facit* $15\frac{3}{5}$

22

7

$15|\frac{4}{10}|\frac{2}{5}$

Abbreviation of the worke of some of the former examples.

$\frac{7}{8}$ by 9

$1\frac{1}{8}$

Facit $7\frac{7}{8}$

$\frac{2}{3}$ by $\frac{3}{4}$

$\frac{2}{4}|\frac{1}{2}$

Facit $\frac{1}{2}$

$4\frac{2}{5}$ by $3\frac{1}{2}$

$13\frac{1}{5}$

$2\frac{1}{5}$

Facit $15\frac{3}{5}$

The twelfth instruction is, of Division in fractions.

TO divide a fraction given, by a fraction (of the same kind) given, bring them both under one common denomination, then divide the new found numerator of the divident, by the new found nume-

rator of the divider, and the quotient is the quotient of the fractions given, the divident being divided by the divider. If a whole number be to be divided by a fraction: multiply the whole number by the denominator of the fraction, and divide the product by the numerator of the said fraction, then the quotient will be the quotient of the whole number divided by the fraction. Contrariwise, if a fraction be to be divided by a whole number, the numerator of the fraction is numerator to the fraction of the quotient, and the product of the whole number multiplied by the denominator, is the denominator. If a whole number and a fraction be to be divided by a [illegible] number, multiply the whole number [illegible] the fraction joyned with it, by the den[illegible] the fraction, and to the product add t[illegible] of the said fraction: then divide th[illegible] the product of the divider multiplye[illegible] minator of the fraction, and the quot[illegible] maund. Contrariwise, if a whole n[illegible] divided by a whole number and a frac[illegible] things as you did with the contrary, on[illegible] that here you must divide the last product b[illegible] gregat. But if a whole number and a fraction be to be divided by a whole number and a fraction, multiply each whole number by the denominator of his fraction, and to every product, add the numerator of his fraction, then multiply the aggregat proceeding of the divident, by the denominator of the fraction of the divider, and divide the product by the product of the aggregat proceeded of the divider multiplied by the denominator of the fraction of the divident, and the quotient is the quotient of the whole number and fraction given, divided by the whole number and fraction given.

Examples.

Examples.

$\frac{2}{3}$ by $\frac{1}{2}$

1

4 | 1

8

Facit $1\frac{1}{3}$

$\frac{3}{5}$ by 9

$\frac{3}{45}$ | $\frac{1}{15}$

Facit $\frac{1}{15}$

$1\frac{1}{2}$ by $\frac{2}{3}$

$\frac{2}{5}$ by $\frac{3}{7}$

Facit $\frac{3}{4}$

$1\frac{3}{4}$ by 7

$\frac{7}{35}$ | $\frac{1}{4}$

Facit $\frac{1}{4}$

$\frac{2}{3}$ by $1\frac{1}{2}$

3

Facit $\frac{4}{9}$

9 by $\frac{1}{7}$

45

Facit 15

7 by $1\frac{3}{4}$

28(4

7

Facit 4

$2\frac{3}{4}$ by $7\frac{2}{7}$

11 37

Facit $1\frac{55}{484}$

$\frac{5}{7}$ by $2\frac{1}{4}$

11

Facit $2\frac{11}{55}$

3

4 8 | 2

55

Abbreviation of the worke of ſome of the former examples.

$\frac{2}{3}$ by $\frac{1}{2}$

4

Facit $1\frac{1}{3}$

9 by $\frac{1}{7}$

3

Facit 15

$\frac{1}{5}$ by 9

Facit $\frac{1}{11}$

The thirteenth inſtruction is, of the variety of Reaſons.

REaſons are in three kinds, to ſay, equall, when the quantities compared of one kind are equal,

rator of the divider, and the quotient is the quotient of the fractions given, the divident being divided by the divider. If a whole number be to be divided by a fraction: multiply the whole number by the denominator of the fraction, and divide the product by the numerator of the said fraction, then the quotient will be the quotient of the whole number divided by the fraction. Contrariwise, if a fraction be to be divided by a whole number, the numerator of the fraction is numerator to the fraction of the quotient, and the product of the whole number multiplied by the denominator, is the denominator. If a whole number and a fraction be to be divided by a whole number, multiply the whole number which hath the fraction joyned with it, by the denominator of the fraction, and to the product add the numerator of the said fraction: then divide that aggregat by the product of the divider multiplyed by the denominator of the fraction, and the quotient is your demaund. Contrariwise, if a whole number be to be divided by a whole number and a fraction, do in all things as you did with the contrary, only excepted, that here you must divide the last product by the aggregat. But if a whole number and a fraction be to be divided by a whole number and a fraction, multiply each whole number by the denominator of his fraction, and to every product, add the numerator of his fraction, then multiply the aggregat proceeding of the divident, by the denominator of the fraction of the divider, and divide the product by the product of the aggregat proceeded of the divider multiplied by the denominator of the fraction of the divident, and the quotient is the quotient of the whole number and fraction given, divided by the whole number and fraction given.

Examples.

Examples.

$\frac{2}{3}$ by $\frac{1}{2}$

1

4 | 1

8

Facit $1\frac{1}{3}$

$\frac{1}{7}$ by 9

$\frac{1}{47}$ | $\frac{1}{77}$

Facit $\frac{1}{77}$

$1\frac{1}{2}$ by $\frac{2}{3}$

3.1

9 | 2

4 |

Fac. $2\frac{1}{4}$

$\frac{2}{3}$ by $\frac{2}{3}$

Facit $\frac{3}{4}$

$1\frac{1}{4}$ by 7

$\frac{7}{5}$ | $\frac{1}{4}$

Facit $\frac{1}{4}$

$\frac{2}{3}$ by $1\frac{1}{2}$

3

Facit $\frac{4}{9}$

9 by $\frac{3}{5}$

45

Facit 15

7 by $1\frac{3}{4}$

28(4

7

Facit 4

$2\frac{1}{4}$ by $7\frac{3}{7}$

11 37

Facit $1\frac{57}{148}$

$7\frac{3}{5}$ by $2\frac{1}{4}$

37 11

3

44 8 | 2

55

Facit $2\frac{18}{11}$

Abbreviation of the worke of ſome of the former examples.

$\frac{2}{3}$ by $\frac{1}{2}$

4

Facit $1\frac{1}{3}$

9 by $\frac{1}{3}$

3

Facit 15

$\frac{3}{5}$ by 9

Facit $\frac{1}{11}$

The thirteenth inſtruction is, of the variety of Reaſons.

REaſons are in three kinds, to ſay, equall, when the quantities compared of one kind are equal,

the greater inequality when the greater is compared to the leſſer, and the leſſer inequality when the leſſer is compared to the greater.

Examples.

Reaſon of equality is as 3 to 3. 7 to 7. &c.
Reaſon of the greater inequality is as 4 to 3. 5 to 3. 5 to 2. 8 to 3. 4 to 2. 9 to 3. 4 to 1. &c.
Reaſon of the leſſer inequality is as 3 to 4. 3 to 5. 2 to 5. 3 to 8. 2 to 4. 3 to 9. 1 to 4. &c.

The foureteenth inſtruction is, of the expreſſing, and naming the reaſon, which two quantities of one kind, applied to number, have, being compared together.

WHen number is applied to any quantity, then that quantity doth, or is imagined to contain ſo many equall quantities of the ſame kind, as the number applied doth containe units, ſo that of quantities of one kind compared together, when the one is ſaid to be one number, the other another number, the expreſſing and naming of the reaſon which is betweene them, is nothing but to find a number, which ſhall have ſuch reaſon to 1, as of the two numbers applied the greater hath to the leſſer, which in conſideration that the compariſon required is to 1, if of the numbers applied you divide the greater by the leſſer, the quotient wilbe the number you deſire, expreſſing the reaſon demanded, and is named by pronouncing the number found, adding this word times, if the quantitits compared be in the greater inequality: but if in the leſſer, with this word *ſue* put before, to make diſtinction of the one and other.

Examples.

Examples.

2 to 2 is $1\frac{1}{2}$ times. 5 to 3 is $1\frac{2}{3}$ times. 7 to 3 is $2\frac{1}{3}$ times. 15 to 4 is $3\frac{3}{4}$ times. &c. infinitely.

2 to 3. is *sub* $1\frac{1}{2}$ times. 3 to 5 is *sub* $1\frac{2}{3}$ times. 3 to 7 is *sub* $2\frac{1}{3}$ times, 4 to 15 is *sub* $3\frac{3}{4}$ times. &c. infinitely.

2 to 1. is 2 times. 6 to 2 is 3 times. 12 to 3 is 4 times. 7 to 1 is 7 times, &c. infinitely.

1 to 2 is *sub* 2 times. 2 to 6 is *sub* 3 times. 3 to 12 is *sub* 4 times. 1 to 7 is *sub* 7 times. &c. infinitely.

Ever in all things effectually respecting what is intended to be expressed, or signified, by the written figures, points, pricks, lines, &c. as in this place the intent is to shew, that of two quantities, or numbers of one kind compared in the greater inequality, the antecedent, doth containe the consequent, as the reason doth expresse: and in the lesser inequality, that the antecedent is contained in the consequent, as the reason doth signifie. Vnderstand againe, when foure quantities given of one kind are proportionall, as the reason betweene the first and the second, is one and the same, that is betweene the third and the fourth: so the reason betweene the first and the third, of the same quantities so given, is one and the same, that is betweene the second and the fourth. Consider more, that that reason which is betweene the quantities of one kind compared together, the same reason is betweene the part or parts of the same antecedent, and the like part or parts of the same consequent. Also betweene the such a times of the same antecedent, and the like such a times of the same consequent.

The fifteenth inſtruction is, to find a fourth number proportionall to three numbers given, that is unto the which one number given compared, ſhall have like reaſon that two numbers given of one kind have compared together.

TO find a number, unto the which a number given ſhall have like reaſon as two numbers given have being compared together, place firſt the three numbers given in order, with two pricks betweene each 2 numbers, as hereunder in the examples you ſee them placed, then mark whether the 2 numbers given, be in the reaſon of equality, or in the reaſon of the greater or leſſer inequality; if they be in the reaſon of equality, then the number which you looke for is equall to the number given; if the leſſer be compared to the greater, divide the greater by the leſſer, and multiply the quotient by the number given: then that product wilbe the number which you intend to find. Or divide the number given, by the leſſer number given, and multiply the quotient by the greater: then that product is the number demanded. Or multiply the number given by the greater number, and divide the product by the leſſer; and that quotient wilbe the number required. In like manner worke, when the greater is compared to the leſſer, onely excepted, where you tooke the greater number, there you muſt take the leſſer, and where you tooke the leſſe number, there you muſt take the greater.

Examples.

If it be required, to find a number unto the which 7 ſhall have like reaſon as 11 hath to 11 anſwer, becauſe the two numbers given are equall, the number is 7.

If it be required to find a number unto the which 7 ſhall have the like reaſon that 11 hath to 55.

11 .. 55 .. 7
5

Facit 35

Or thus

11 .. 55 .. 7
5
7 | 385 | 35
Facit 35

Or thus

11 .. 55 .. 7
7

5
385 | 35
2
Facit 35

Or thus

11 .. 55 .. 7
1 .. 5 ..

Facit 35

If it be required to find a number unto the which 7 ſhall have ſuch reaſon as 55 hath to 11.

55 .. 11 .. 7
2
7 | 1
Facit 1 2/7

Or thus

55 .. 11 .. 7
22
7/77 | 1
Facit 1 2/7

Or thus

55 .. 1 .. 7
22
77 | 1
Facit 1 2/7

Or thus

2
55 .. 11 . 7 | 1
5 1 5
Facit 1 2/7

If it be required to find a number unto the which 14 1/2 ſhall have ſuch reaſon as 16 1/7 hath to 8 1/10.

16 1/7

The fifteenth inſtruction is, to find a fourth number proportionall to three numbers given, that is unto the which one number given compared, ſhall have like reaſon that two numbers given of one kind have compared together.

TO find a number, unto the which a number given ſhall have like reaſon as two numbers given have being compared together, place firſt the three numbers given in order, with two pricks betweene each 2 numbers, as hereunder in the examples you ſee them placed, then mark whether the numbers given, be in the reaſon of equality, or reaſon of the greater or leſſer inequality: if they be in the reaſon of equality, then the number which you looke for is equall to the number given. If the leſſer be compared to the greater, divide the greater by the leſſer, and multiply the quotient by the number given: then that product wilbe the number which you intend to find. Or divide the number given, by the leſſer number given, and multiply the quotient by the greater: then that product is the number demanded. Or multiply the number given by the greater number, and divide the product by the leſſer; and that quotient wilbe the number required. In like manner worke, when the greater is compared to the leſſer, onely excepted, where you tooke the greater number, there you muſt take the leſſer, and where you tooke the leſſe number, there you muſt take the greater.

Examples.

If it be required, to find a number unto the which 7 ſhall have like reaſon as 11 hath to 11 anſwer, becauſe the two numbers given are equall, the number is 7.

If it be required to find a number unto the which 7 ſhall have the like reaſon that 11 hath to 55.

Or thus

11 .. 55 .. 7
5

Facit 35

11 .. 55 .. 7
7

Facit 35

Or thus

11 .. 55 .. 7

Facit 35

Or thus

11 .. 55 .. 7
1 .. 5 ..

Facit 35

d to find a number unto the which
reaſon as 55 hath to 11.

Or thus

7
2

Facit $1\frac{2}{7}$

55 .. 11 .. 7
22

Facit $1\frac{2}{7}$

Or thus

55 .. 1 .. 7
22

Facit $1\frac{2}{7}$

Or thus

55 .. 11 .. .
5 1

Facit $1\frac{2}{7}$

If it be required to find a number unto the which $14\frac{1}{3}$ ſhall have ſuch reaſon as $16\frac{1}{3}$ hath to $8\frac{1}{10}$.

$16\frac{1}{3}$

$16\frac{1}{5}$ . . $8\frac{1}{10}$ . . $14\frac{1}{2}$

81

Facit $7\frac{1}{4}$

Orthus.

$16\frac{1}{5}$ . . $8\frac{1}{10}$ . . $14\frac{1}{2}$

81 81 29

2349

20

40

x x 745|7

1620

Facit $7\frac{1}{4}$

Orthus

$16\frac{1}{5}$ . . $8\frac{1}{10}$ . . $14\frac{1}{2}$

81 81 29

145 40

162 x x 745|7

1620

Facit $7\frac{1}{4}$

Orthus

$16\frac{1}{5}$ . . $8\frac{1}{10}$ . . $14\frac{1}{2}$

2 . . 1 . .

Facit $7\frac{1}{4}$

And in like manner you may worke to find any fourth number proportionall required.

The end of the first Booke.

THOMAS MASTERSON HIS SECOND BOOK OF ARITHMETICKE,

Now newly set out, with a briefe explanation of every question,

Shewing the ingenious inventions, and figurative operations, to calculate the true solution or answer of Arithmeticall questions, after a more perfect, plaine, briefe, well ordered Arithmeticall way, than any other heretofore published: no lesse pleasant and profitable to those which are given to be merchants, than to others.

Nothing without labour: All things with reason.



LONDON,
Printed by GEORGE MILLER dwelling in the Blacke-Friers. M.DC.XXXIV.

R.1.
16:1::19
3)19(6 3

THOMAS MASTERSON HIS SECOND BOOKE OF ARITHMETICKE,

Now newly set out, with a briefe Explanation of every Question,

By HVMFREY WAYNMAN.

The Rule of 3.

(1.) IF one yard of kersey cost six shillings, how many yards shall I buy for nineteene pound?

6 . . 1 . . 19

Facit 63 1/3 yards.

Bring 6 sh. into the 3/72 l. then I multiply 19 l by 10. by adding a cypher to it to bring it into 10ths, and then I divide it by 3 the number.

(2.) If six pound of sugar cost eight shillings, how many pound shall I buy for eight pence?

8 . . 6 . . 8

Facit 1/2 pound.

Because 8 d is the 1/72 of 8 sh. therefore it must be the 1/72 of 6 l. which divide by 12.

(3.) If foureteene elles cost seventeene shillings,

Because the third number is one, I cannot multiplie the second number, for one doth neither multiply nor divide, but divide the second number by the first.

lings, what cost one elle?

14 . . 17 . . 1.

Facit 1 sh 2 $\frac{4}{7}$ d.

First suppose $\frac{1}{4}$ to cost 9 d. then the $\frac{3}{4}$ would cost 27 d. but because 1 l cost 9 d. which is $\frac{4}{4}$ therefore I take $\frac{1}{4}$ part of 27 which is &c.

(4.) If one pound cost nine pence, what cost $\frac{3}{4}$ L.

1 . . 9 . . $\frac{3}{4}$

Facit 6 $\frac{3}{4}$ d.

First multiply the third number by 4 to bring it into the name of the first, and then consider 4 d. is the $\frac{1}{60}$ l. therefore take $\frac{1}{60}$ part of 1892 the product aforesaid.

(5.) If $\frac{1}{4}$ L. of Sugar cost foure pence, what cost 473 L.

$\frac{1}{4}$ . . 4 . . 473

1892

Facit l 31 . 10 . 8

Here you should divide 97 by 140. which cannot bee done, therfore instead of multiplying 97 by 20. I do divide 140 by 20. and with that quotus I do divide 97. for there is the like reason betweene 7 and 97 as there would have beene betweene 140 and the product 97 multiplied by 20.

(6.) If 140 yards cost 97 l. what cost one yard?

140 . . 97 . . 1

Facit 13 sh 10 $\frac{3}{7}$ d.

First consider that 14 l is $\frac{1}{8}$ C. therefore I must take $\frac{1}{8}$ of 17 $\frac{1}{7}$ sh. saying 8 in 17 $\frac{1}{7}$ two times, rests 1 $\frac{1}{7}$ sh. then $\frac{1}{8}$ of $\frac{8}{7}$ is $\frac{1}{7}$ sh. which one multiplied by 12 and divided by 7. *Facit* 1 $\frac{5}{7}$ Totall 2—1 $\frac{5}{7}$ d.

(7.) If 1 C cost 17 $\frac{1}{7}$ sh. what cost 14 L.

1 . . 17 $\frac{1}{7}$ . . 14

Facit 2 sh 1 $\frac{5}{7}$ d.

(8.) If 1 C cost $2\frac{1}{2}$l. what cost one quartern weight?

1 . . $2\frac{1}{2}$ . . 1

Facit 14 sh 2 d.

First consider that $2\frac{1}{2}$l. is 2 d. 16. sh 8. d. then because 4 quarters cost so much, one quarter must cost but the one fourth part of it, which is 14 sh. 2 d.

(9.) If $\frac{3}{4}$ L cost 6 d. what cost $932\frac{1}{2}$ L.

$\frac{3}{4}$ . . 6 . . . $932\frac{1}{2}$ L.

Facit l 31. 1. 8.

First consider, if $\frac{3}{4}$ cost 6 pence, one pound will cost 8 d. then consider that 8 d is $\frac{1}{10}$ l. therefore take $\frac{1}{10}$ of $932\frac{1}{2}$ L.

(10) If one ell of taffeta cost 6 sh 8 d. what cost $\frac{1}{8}$ ell

1 . . 6. 8 . . $\frac{1}{8}$

Facit 4 sh 2 d.

First consider that $\frac{1}{2}$ part of 6 sh 8 d. is 10 d. then say, if $\frac{1}{2}$ cost 10 d. $\frac{1}{8}$ will cost 50 d.

(11.) If one pound cost 4 sh $8\frac{1}{2}$ d. what cost 8L.

1 . 4 . $8\frac{1}{2}$ . . 8

Facit 1 l. 17 sh. 8 d.

This needs no more working than to multiply 4 sh $8\frac{1}{2}$ d. by 8.

(12.) If 1 L. of pepper cost 2 sh. 4 d. what cost 4 oz.

1 . . 2 . 4 . . 4.

Facit 7 d.

4 oz. is the $\frac{1}{4}$ l. therefore I take the $\frac{1}{4}$ of 2 sh 4 d. which is 7 d.

(13.) If 1 L. cost 5 sh 9 d. what cost $\frac{2}{3}$ oz.

1 . . 5 . 9 . . $\frac{2}{3}$

$11\frac{1}{2}$

Facit $2\frac{7}{8}$ d.

First take the $\frac{1}{3}$ l. which is 8 ounces, and the $\frac{1}{2}$ of the 2 oz. which is $\frac{1}{3}$ then the question

, if 8 oz. cost 5 sh 9 d. what shall the $\frac{2}{3}$ ounce cost? bring the into thirds, and they are 23 hirds, therefore divide 5 sh 9 d. by 4. which is done by 6 and by 4.

Consider that if one hundred coſt 6 ſh. the $\frac{1}{4}$C coſt 38 d. then ſay 6 times 9 is 54. which with the 38 d make 55 ſh 6 d. ſet downe 15 ſh 6 d. and carry 2 l. then ſay three times one is three, and two in minde is 5 l 15 ſh 6 d.

(14.) If 1 C coſt 6 ſh. what coſt 19 C 1 qr.

1 . . 6 . . 19. 1

1 . 6

Facit 5 l 15 ſh 6 d.

Here 27 ſh is to be divided by 35. and becauſe 5 times 7 is 35. therefore divide it by 5 and 7. ſaying 5 in 27. 5 times, and reſt 2 ſh. which is 24 d. then 5 in 24. 4 times, remaines $\frac{4}{7}$ d. then take $\frac{2}{7}$ part of 1 d. ſaying, 7 in 64. 9 times, reſt one, multiply the denominator by the firſt remainder, ſaying, once 5 is 5. and 4 is 9. which is the divident, then multiply your two dividers together ſaying, 7 times 5 is 35. which divide. *Facit* $9\frac{2}{35}$ d.

(15.) If 35 yards coſt 27 ſh. what coſt one yard?

35 . . 27 . . 1

5 . $4\frac{4}{7}$

Facit $9\frac{2}{35}$ d.

A generall Rule.

Here you are to divide 34 by 24. & becauſe 2 times 12 is 24. I do divide 34 by 2 and by 12. And this is a generall Rule, whenſoever you divide any ſumme by the parts of a divider, as if you were to divide a ſumme by 24 and would do it by 6 and 4 then remember that the remainder of the firſt diviſion bee ſet downe without a denominator, and the remainer of the next diviſion let that be multiplied by your former divider, adding in your former remainer, and that aggregat ſhall bee the numerator to the laſt fraction, and then multiply the two dividers together, and their product is denominator.

(16.) If 24 yards of velvet coſt 34 l. what coſt one yard?

24 . . 34 . . 1

17

Facit 1 l 8 ſh 4 d.

First imagin 10 $\frac{1}{2}$d to bee 1 ſh. and then $6\frac{1}{4}$ will coſt 6 ſh 3 d. but becauſe it wants $\frac{1}{12}$ which is $\frac{2}{8}$ ſh. therefore I doe multiply it by 12 and divide by 8. and then ſubſtract the $\frac{2}{8}$ d.

(17.) If one yard of fuſtian coſt 10 $\frac{1}{2}$d. what coſt $6\frac{1}{4}$ yards?

1 . . $10\frac{1}{2}$ . . $6\frac{1}{4}$

— . $9\frac{1}{8}$

Facit 5 ſh $5\frac{1}{8}$d.

(18.) I

(18.) If $\frac{3}{4}$ L coſt 6 d. how many pounds ſhall I buy for 18 ſh.

6 . . $\frac{3}{4}$ . . 18
2 9

Facit 27 L.

First conſider if $\frac{3}{4}$ l. coſt 6 d. one pound will coſt 8 d. then conſider if 8 pence buy one pound, 12 d will buy $1\frac{1}{2}$ l. and therfore 18 ſh will buy 27 l.

(19.) If one yard of velvet coſt 17 ſh 6 d. what coſt 43 yards?

1 . . 17 . 6 . . 43

301

Facit 37 l. 12 ſh. 6 d.

First conſider 17 ſh 6 d is the $\frac{7}{8}$ l. and therefore I multiply it by 7 and divide by 8. and it is done.

(20.) If one peece of moccado coſt 1 l 2 ſh 6 d. what coſt 23 peeces?

1 . . 1. 2. 6 . . 23
2. 17. 6

Facit 25 l. 17 ſh. 6 d.

First conſider that 1 l 2 ſh 6 d is more than 1 l. therefore for 23 peeces ſet down 23 l. and then for 2 ſh 6 d take the $\frac{1}{7}$ of 23 and add it, becauſe 2 ſh 6 d is $\frac{1}{7}$

(21.) If 14 yards of ſackcloth coſt 18 ſh 1 d. what coſt one yard?

14 . . 18. 1 . . 1
2. 7

Facit 1 ſh $3\frac{1}{2}$ d.

Here firſt conſider I ſhould divide 18 ſh 1 d by 14 which I doe by 7 and by 2. for 7 times 2 is 14. and ſo in the like.

(22.) If 33 yards of cloth coſt 11 l 13 ſh 5 d. what coſt one yard?

33 . . 11. 13. 5 . . 1

1. 1. $2\frac{7}{11}$

Facit 7 ſh. $\frac{29}{33}$ d.

Here becauſe 11 times 3 is 33. therefore I do divide 11 l 13 ſh 5 d by 11 and 3.

(23.) If one yard of velvet coſt 1 16 ſh 5 d. what coſt $\frac{5}{6}$ of a yard?

1 . . 1.6.5 . . $\frac{5}{6}$

—.4. 4 $\frac{5}{6}$

Facit 1 12 ſh $\frac{5}{6}$ d.

Conſider that if one yard coſt 1 16 ſh 5 d. the $\frac{6}{6}$ would coſt as much, but the queſtion is what $\frac{5}{6}$ will coſt, and therefore becauſe $\frac{5}{6}$ wanteth $\frac{1}{6}$ of 6 therefore I ſubſtract the $\frac{1}{6}$ part from 1 16 ſh 5 d. and it is done.

(24.) If 3 l. 2 oz. coſt 3 l. what coſt one ounce?

3 . 2 . . 3 . . 1

16 6

50 *Facit* 1 ſh $2\frac{1}{5}$ d.

Here I multiply 3 l by 16 to bring it into ounces, and add in the 2 oz. and they make in all 50 oz. then I multiply the 3 l by 20 to bring it into ſhillings, and it is 60 ſh. then I ſtrike the cypher of 60 and the cypher of 50 and divide 6 by 5. as in exampl..

(25.) If one yard of velvet coſt 18 ſh 9 d. how many yards ſhall I buy for 17 l.

18. 9 . . 1 . . 17

$1\frac{2}{17}$

Facit $18\frac{1}{17}$ yards.

Firſt conſider that 18 ſh 9 d is $\frac{15}{16}$ l. & 20 is $\frac{16}{16}$ l. then ſay, if $\frac{15}{16}$ l buy one yard, then 20 ſh will buy $\frac{1}{1\frac{2}{17}}$ yard, then 17 l muſt buy $17\frac{17}{1\frac{2}{17}}$ yards, that is to ſay, $18\frac{2}{17}$ yards.

(26.) If 3 l. coſt 17 ſh. how much ſhall I buy for 6 d.

17 . . 3 . . 6

8

24

Facit $1\frac{7}{27}$ oz.

In this queſtion I ſhould multiply 17 ſh by 2 to bring it into 6 pence, but I do half both numbers, and do multiply 17 by 1. & 3 l by 8. to bring it into ounces.

(27.) If 5 18 l of lead coſt 2 l. what coſt 1 l.

518 . . 2 . . 1

240

480 / 518 | 240 / 259 *Facit* $\frac{240}{259}$ d.

In this queſtion 2 l muſt be multiplyed by 240 to bring it into pence, and they make 240 d abbreviated is $\frac{240}{259}$ d.

(28.) If

(28.) If $7\frac{1}{2}$ yards coſt 9 ſh. what coſt $8\frac{4}{5}$ yard?

$7\frac{1}{2}$ . . 9 . . $8\frac{4}{5}$

75

Facit 10 ſh.

First multiply $8\frac{4}{5}$ by 9. ſaying $\frac{9}{5}$ in 3. and then 9 times 8 is 72. and 3 is 75 being multiplied by 2 make 150. which divide by $7\frac{1}{2}$ brought into halfes, which is 15. and then divide 150 by 15. and the quotus wilbe 10 ſh.

(29.) If $\frac{1}{4}$ L. of Sugar coſt $\frac{1}{2}$ d. what coſt $\frac{2}{3}$ L.

$\frac{1}{32}$ . . $\frac{1}{2}$ . . $\frac{2}{3}$

64

Facit $10\frac{1}{3}$ d.

Multiply 32 the denominator of the firſt fraction by 2 the numerator of the laſt, (for 1 doth never multiply nor divide) and that is 64 for divident, then multiply 2 the denominator of the middle by 3 the denominator of the laſt fraction, *Facit* 6 for divider, and the quotus is $10\frac{1}{3}$ d.

(30.) If 1 oz. of Amber coſt 2 l 15 ſh $8\frac{1}{2}$ d. what coſt 15 oz.

1 . . 2. 15. $8\frac{1}{2}$ . . 15

13. 18. $6\frac{1}{2}$.

Facit 41 l 15 ſh $7\frac{1}{2}$ d.

Conſidering five times 3 is 15. therfore I multiply 2 l 15 ſh $8\frac{1}{2}$ d. by 5 and 5.

(31.) If 1 C coſt 7 ſh 8 d. what coſt 1 L.

1 . . 7 . 8 . . . 1

1 . 11

Facit $\frac{23}{28}$ d.

Here I ſhould divide 7 ſh 8 d. by 112 l. which is a hundred weight, but it is divided by 4 and 28. for 4 times 28 is 112.

(32.) If $3\frac{2}{3}$ oz. of muſk coſt 1 8 ſh $4\frac{1}{6}$ d. what coſt one ounce?

$3\frac{2}{3}$ . . 18 . $4\frac{1}{6}$ . . . 1

11 55 . $\frac{1}{2}$

Facit 5 ſh $\frac{1}{22}$ d.

First bring $3\frac{2}{3}$ oz. into thirds, and they are $\frac{11}{3}$. then conſidering 1 oz. is the $\frac{3}{3}$ therfore multiply 18 ſh. $4\frac{1}{2}$ d. by 3. and divide the product by 11. and ſo it is done.

(33.) If one yard of Sattin coſt 9 ſh. what coſt $3\frac{3}{8}$ yards?

1 . . 9 . . $3\frac{3}{8}$

1 . 13 . 9
3 . $4\frac{1}{2}$

Facit 1 l. 10 ſh. $4\frac{1}{2}$ d.

First ſuppoſe the yard to be at 20 ſh and then $3\frac{3}{8}$ comes to 11 l. 13 ſh. 9 d. from which ſubſtract the $\frac{1}{10}$ part, becauſe 9 ſh wants the $\frac{1}{10}$ part of 10 ſh and the remainder is the Facit.

(34.) If one piſtolet be worth 5 ſh 10 d. to how much amount 984 piſtolets?

1 . . 5 . 10 . . 984

246
41

Facit 287 l.

First take the $\frac{1}{4}$ of 984 becauſe 5 ſh is $\frac{1}{4}$ l. then becauſe 10 d is the $\frac{1}{6}$ of 5 ſh take $\frac{1}{6}$ of 5 ſh adde them together.

(35.) If a Ioachims daller be worth 4 ſh 1 d. to how much amount 415 Ioachims dallers.

1 . . 4 . 1 . . 415

34 . 7

Facit 841 l. 14 ſh. 7 d.

In this Queſtion firſt in the penny take the $\frac{1}{12}$ of 415 the 34. 7 d. then for 4 d I take the $\frac{1}{5}$ of 415. becauſe 4 ſh is the $\frac{1}{5}$ l of

(36.) If one ounce of muſk coſt 9 ſh 4 d. what coſt 17 oz.

1 . . 9 . 4 . . 17

8 . 10 . —
— . 11 . 4

Facit 7 l. 18 ſh. 8 d.

First ſuppoſe the ounce to coſt 10 ſh and then 17 oz. will coſt 8 l 10 ſh. but becauſe it wants 8 d in every ounce, which is $\frac{2}{3}$ or $\frac{1}{15}$ of 10 ſh then I ſubſtract the $\frac{1}{15}$ of 8 l 10 ſh

(37.) If

(37.) If a Philippus daller be worth 4 ſh $11\frac{1}{2}$ d. what are 781 Philippus dallers worth?

1 . . 4 . $11\frac{1}{2}$ . . 781

195 . 5 . —
1 . 12 . $6\frac{1}{2}$

Facit l 193 . 12 . $5\frac{1}{2}$

First for 5 ſh. take the $\frac{1}{4}$ part of 781 which is 195. 5 ſh. then becauſe that it is the $\frac{1}{3}$ d. leſſe, wch is $\frac{1}{120}$ part of 5ſh I take the $\frac{1}{120}$ part of 1951 5 ſh. ſaying 12 in 19 once, 75 twopences, and becauſe 2 d is the $\frac{1}{6}$ ſh. therefore I ſay 6 in 7 once, remaines one. 6 in 15 twice, reſt $\frac{3}{6}$ ſh. which is 6 d. then if 20 ſh yeeld 2 d. 5 ſh will yeeld $\frac{1}{2}$ d. which being ſubſtracted out of 1951 5 ſh the quotus will be 193 l 12 ſh $5\frac{1}{2}$ d.

(38.) If $2\frac{1}{2}$ yards coſt 11 $\frac{1}{4}$ d. what coſt 6 yards?

$2\frac{1}{2}$ . . $11\frac{1}{4}$ . . 6

$67\frac{1}{2}$
27

Facit 2 ſh 3 d.

First multiply $11\frac{1}{4}$ by 6 the product $67.\frac{1}{2}$ which muſt bee brought into halfes, becauſe the firſt number is to be brought into halfes, but in the middle ſay 2 times 7 is 14 and 1 is 15. then 2 times 6 is 12 and one is 13. which is 135 being divided by 5 the product of the firſt number brought into halfes, Facit &c.

(39) If one gold gilden be worth 4 ſh 10 d. to how much amount 475 gold gildens?

1 . . 4 . 10 . . 475

118 . 15 . —
3 . 19 . 2

Facit l 114 . 15 . 10

First imagine to coſt 5 ſh. and then it amounteth to 2181 15 ſh. but it coſt 2 d leſſe, which is $\frac{1}{120}$ l. therefore I take $\frac{1}{120}$ l of 475. and ſubſtract from 118 l 15 ſh. and it is done.

(40.) If $\frac{2}{3}$ L of ſaffron coſt 12 ſh 9 d. what coſt 7 L.

$\frac{2}{3}$ . . 12 . 9 . . 7

4 . 9 . 3
2 . 4 . $7\frac{1}{2}$

Facit l 6 . 13 . $10\frac{1}{2}$

First multiply 12 ſh 9 d by 7. the product is 4 l 9 ſh 3 d. which were the facit of the $\frac{2}{3}$ I were one pound, but ſeeing $\frac{2}{3}$ coſts ſo much, $\frac{3}{3}$ muſt coſt one halfe ſo much more, therefore I take the $\frac{1}{2}$ of 4 l 9 ſh 3 d. and add to it the facit is 6 l 13 ſh $10\frac{1}{2}$ d.

(41.) If ounce of silver cost 5 sh 2 d. what cost 47.oz.1 2.d.

1 . . 5 . 2 . . 47. 12
11. 18.—
—. 7. $11\frac{1}{7}$

Facit 12 l. 5 sh. $11\frac{1}{7}$ d.

First imagine the ounce to cost 20 sh. & then the 47 oz. 12 d. will come to 47 l. 12 sh then for 5 sh I take the $\frac{1}{4}$ of 47 l 12 sh. and for 12 d which is $\frac{1}{4}$ sh I divide 47 by 6. the quotus is 7 d. rest 5. which is 10. then if 20 sh. yeeld 2 d. 10 sh must yeeld 1 d. which makes 11 d then if 10 sh yeeld 1 d. 2 sh must yeeld $\frac{1}{7}$ d. which makes in all 12 l 5 sh $11\frac{1}{7}$ d

(42.) If 11 yards of Fustian cost 15 sh 10 d. what cost 27 yards?

11 . . 15. 10 . . 27

7. 2. 6
21. 7. 6

Facit 1. 18. $10\frac{4}{11}$

First multiplie 15 sh 10 d by 3 and 9 because 3 times 9 is 27. and divide by 11.

(43.) If 47 yards of taffeta cost 8 l and 9 d. what cost 12 yards?

47 . . 8.—. 9 . . 12

Facit 2 l. 1 sh. $\frac{24}{47}$ d

96. 9
2 2
4

Multiply by 12. & divide by 47.

(44.) If $18\frac{1}{2}$ L. of sugar cost 22 sh. what cost 106 L.

18 . . 22 . . 106

116. 12.—
58. 6.—

Facit 61. 9 sh. $6\frac{1}{2}$ d.

Considering that 22 sh is $\frac{11}{10}$ l. and in working first I multiply 22 sh by 6 and it makes 6 l. 12 sh. I set downe 12 sh and carry 6 l and then I multiply the rest of the figures by 11. then divide the product by 2 and 9. because 2 times 9 is 18. which should be divider.

(45.) If

(45.) If $\frac{3}{4}$L of saffron cost $\frac{5}{6}$l. what cost $\frac{3}{32}$L.

$\frac{3}{4}$ . . $\frac{5}{6}$ . . $\frac{3}{32}$

192 20

Facit 2 sh 1 d.

4202
X6
9

The question being a fraction, is wrought the common way of the Rule of three in Fractions, or you may multiply by the two threes you ballance the other.

(46.) If 1 oz. of silk cost 2 sh 4 d. what cost 5 L 7 oz.

1 . . 2 . 4 . . 5 . 7
16
87
8. 14.—
1. 9.—

Facit 10 l. 3 sh.—

Reduce 5 l. 7 oz. into oz. and then worke by the rule of practice.

(47.) If one ell of linnen cloth cost 11 $\frac{1}{2}$d. what cost 3789 elles?

1 . . 11 $\frac{1}{2}$ . . 3789
126. 6.—
47. 7. 3
7. 17. 10 $\frac{1}{2}$

Facit 181 l. 11 sh. 1 $\frac{1}{2}$d.

Bring 11 $\frac{1}{2}$d. into the parts of a pound, namely 8 d $\frac{1}{32}$ d. 8 d is $\frac{1}{3}$ l. 3 d is $\frac{1}{80}$ l. $\frac{1}{2}$ the $\frac{1}{2}$ of the quotus of 3 d.

(48.) If 2 L 3 oz cost 3 l. how much shall I buy for 11 d.

3 . . 2. 3 . . 11
240 16
720 35
385 | 77
720 | 144

Facit $\frac{77}{144}$ oz.

First bring 3 l into pence, by multiplying it by 240. and the 2 l 3 oz. into ounces, by multiplying it by 16. and then it will stand thus. If 720 buy 35 oz. what will 11 d buy? Multiply 35 by 11. the product is 305. which cannot be divided by 785. and so it rests a fraction.

(49) If

Consider that what part 13 ſh is of a pound, I find 12 ſh the $\frac{1}{7}$ and one ſhilling the $\frac{1}{12}$ of that, and therefore I take the $\frac{1}{7}$ of 112. and the $\frac{1}{15}$ of that $\frac{1}{7}$ and adde it together, Facit 24 l. 4. $\frac{4}{5}$ ounce.

(49.) If 1 C coſt 3 l. how much ſhall I buy for 13 ſh

3 . . 1 . . 13

12 112

22. $6\frac{2}{7}$

1. $13\frac{13}{15}$

Facit 24L 4. $\frac{4}{5}$ oz.

First I bring 1 qr. into pounds, Facit 28. and ſo multiply 11 by 8. Facit 308 to be divided by three times 40. now I omit multiplying 240 by 3. becauſe that it wilbe a greater number than is my dividend, wherefore I would bring 308 by 16 into ounces, and inſtead of multiplying by 16. I divide 240 by 16 the quotus is 15. and by that meanes the 308 is 34. $\frac{2}{3}$ ounces, then I ſay 3 times 15 is 45. which is diuider to 308. and divide by 9 and 5. becauſe 5 times 9 is 45.

(50.) If 1 qr coſt 3 l. how much ſhal I buy for 11 d.

3 . . 1 . . . 11

240 28

45 308

$34\frac{2}{5}$

Facit $6\frac{18}{45}$ oz.

Bring 15 l into pence, and divide by 317. Facit 11. $\frac{113}{317}$ d.

(51.) If 317 L of ſugar coſt 15 l. what coſt 1 L.

317 . . 15 . . 1

240

Facit $11\frac{113}{317}$ d.

3600

433

Conſider that if 8 ounces coſt 8 d. it is a penny for an ounce, & then it doth amount to $117\frac{1}{3}$ d. but $\frac{1}{2}$ L. coſt but 7 d therefore ſeeing it is caſt up at 8 d the $\frac{1}{2}$ l. ſubſtract $\frac{1}{5}$ out of $117\frac{1}{3}$ and it is done.

(52.) If $\frac{1}{2}$ L coſt 7 d. what coſt 7 L $5\frac{1}{3}$ oz.

$\frac{1}{2}$ . . 7 . . 7 . $5\frac{1}{3}$

16

Facit 8 ſh $6\frac{2}{3}$ d. $117\frac{1}{3}$

$14\frac{2}{3}$

$102\frac{2}{3}$

(53.) If

(53.) If $57\frac{7}{9}$ L cost 4 l. how many pound shall I buy for 7 d.

4 . . $57\frac{7}{9}$ . . 7

240

520

960

3 64 | 91 / 8 64 | 216 *Facit* $\frac{91}{216}$ L.

Bring the 4 l into pence, the $57\frac{7}{9}$ into 9ths, and multiply likewise your first number by 9 to bring it into 9ths, then multiply your middle number by 7. & make it new numerator, and you first number denominator.

(54.) If a crosse daller be worth 4 sh $2\frac{1}{2}$ d. what are 987 crosse dallers worth?

1 . . 4 . $2\frac{1}{2}$ . . 987

197 . 8 .—

8 . 4 . 6

2 . 1 . $1\frac{1}{2}$

Facit l 207 . 13 . $7\frac{1}{2}$

For 4 sh take the $\frac{1}{5}$ of 987. then for 2 d the $\frac{1}{10}$ and for $\frac{1}{2}$ the $\frac{1}{2}$ of the quotus of 2 d.

(55.) If 1 L of nutmegs cost 7 sh 9 d. what cost 13 L 3 oz.

1 . . 7 . 9 . . 13 . 3 . 9

3 . 5 . 11 . 3

1 . 12 . 11 . 7 . 6

—. 3 . 3 . 6 . 9

Facit l 5 . 2 . 2 . 5 . 3

Imagine one to cost 20 sh. the 13 l 3 oz. will cost $13\frac{3}{10}$ l. which is 3 sh 9 d. the for 5 sh I take the $\frac{1}{4}$ and $\frac{1}{6}$ of that for 2 sh 6 d and the $\frac{1}{10}$ of that for 3 d. which is 7 sh 9 d. and the facit is 5 l 2 sh 2 d 5 mites.

(56.) If 1 C cost 17 l 19 sh. what cost 3 qr 7 L.

1 . . 17 . 19 . . 3 . 7

8 . 19 . 6

4 . 9 . 9

1 . 2 . $5\frac{1}{4}$

Facit l 14 . 11 . $8\frac{1}{4}$

Consider that if 1 C cost 17 l 19 sh $\frac{1}{3}$ C will cost $\frac{1}{3}$ so much, $\frac{1}{4}$ half that, and 7 l $\frac{1}{2}$ of that quarter, which altogether 14 l 11 sh

(57.) If $8\frac{1}{4}$ d.

(57.) If 7 yards of velvet coſt 3 l. $5\frac{1}{2}$ d. what coſt $3\frac{1}{8}$ yards?

Multiply 3 l $5\frac{1}{2}$ d by $3\frac{3}{8}$ yards. Firſt by 3 yards, and then to multiply by $\frac{3}{8}$ take $\frac{1}{8}$ of the part of $\frac{3}{8}$ for the $\frac{3}{8}$ yard, and the $\frac{3}{8}$ yard is the $\frac{1}{8}$ of 3 yards, which add to the former, and divide by 7.

7 . . 3 .—. $5\frac{1}{2}$ . . $3\frac{3}{8}$

9 . 1 . $4\frac{1}{2}$
1 . 2 . $8\frac{1}{16}$

10 . 4 . $\frac{9}{16}$

Facit 1 l. . 9 . $1\frac{89}{112}$

(58.) If 3 qr. coſt 3 ſh 2 d. what coſt 17 C 2 qr.

3 . . 3 . 2 . . 17 . 2

1 . $\frac{1}{7}$

4 . $2\frac{3}{7}$

3 . 10.—
—. 2. 11
—. —. $11\frac{2}{3}$

Facit 3 l. 13 ſh. $10\frac{2}{3}$ d.

Firſt conſider that if $\frac{3}{4}$ coſt 3 ſh 2 d. $\frac{4}{4}$ which is 1 C will coſt 4 ſh $\frac{2}{3}$ d. then ſuppoſe the 1 C to coſt 20 ſh. and then 17 C 2 oz. will coſt 17 l 10 ſh. then for 4 ſh take the $\frac{1}{7}$ part, and for 2 d. the $\frac{1}{7}$ of 10 l. but there is but 17 l in all, and therefore I cannot have ever a l. but I conſider 2 d is the $\frac{1}{2}$ of a ſhilling, therefore I take the $\frac{1}{2}$ of 17. and place it in the firſt place of ſhillings, ſaying, 6 in 17 two times, reſts $\frac{5}{2}$ which is 10 d then if 10 ſh. yeeld 2 d. 10 ſh. will yeeld 1 d. which make 11, then for the $\frac{2}{3}$ take the $\frac{1}{3}$ of the quotus of 2 d. for $\frac{2}{3}$ d is $\frac{1}{3}$ d. as in former example.

(59.) If 1 C coſt 1 $3\frac{11}{12}$ l. what coſt one ounce?

1 . . $13\frac{11}{12}$ . . 1

1 . 14 . 9 . 6
4 . 4 . 2 . . 3
1 . 1 . —. 6 . 9

Facit d 1. 10. 4 &c.

Conſider that 11 $13\frac{11}{12}$ is 18. ſh. 4. d. then take the part of it for 14 l. and 11 doth coſt the 14 part of of that, and one ounce the 16 part, that which is the queſtion demaunded.

(60.) If

(60.) If $\frac{1}{7}$ L of ſugar coſt $10\frac{1}{2}$d. how many pound ſhall I buy for 2 l.

$10\frac{1}{2}$ . . $\frac{1}{7}$ . . 2
21 80

640
$213\frac{1}{3}$
Facit $30\frac{10}{21}$ L.

Here I firſt bring $\frac{1}{2}$ $10\frac{1}{2}$ into $\frac{1}{2}$ and they are 21. then I ſhould bring the denominator 7 to 21 and multiply it, but I omit it, and multiply 2 l. which ſhould bee multiplied by 240 to bring it into $\frac{1}{3}$ pence, and 80 which is the $\frac{1}{3}$ part of 240. to bring in the fraction, firſt ſay 2 times 2 is 4. and 2 times 4 is 8. then 8 times 80 is 640. which I divide by 3 and 7. becauſe 3 times 7 is 21. ſeeing that it is all one to multiply or divide a dividend.

(61.) If $\frac{11}{12}$ oz. coſt 4 ſh. what coſt 3 L 7 oz.

$\frac{11}{12}$ . . 4 . . 3 . . 7
16

55
5
60

Facit 12 l.

Here I conſider that $\frac{11}{12}$ ounce take $\frac{1}{11}$ more to make it one ounce and therefore I add $\frac{1}{11}$ part to this, and likewiſe $\frac{1}{11}$ part of 55 the product of 3 L 7 oz. and I make it 60 ounces, and then the queſtion is, if one ounce coſt 4 ſh. what wil. 60. which is anſwered by taking the $\frac{1}{5}$ part of 60 which is 12.

(62.) If 3 C 1 qr 7 L coſt 27 L. what coſt 1 C.

3 . 1 . 7 . . 27 . . 1
16

13
53
Facit 18 . 3. $\frac{2}{11}$

4320
281
6

Here I conſider that 7 L is $\frac{1}{4}$ C. therefore I bring the 3 l 1 ſh 7 d $\frac{1}{2}$ into $\frac{1}{4}$ quarters,

(63.) If

(63.) If 7 C 8 L cost 10 l. what cost 1 C.

$7\frac{1}{14} \cdot\cdot 19 \cdot\cdot 1$

99 — 76

266

$24 \cdot 3 \cdot 7\frac{7}{11}$

Facit $12 \cdot 13 \cdot 8\frac{8}{9}|\frac{8}{9}$

Because 8 L is $\frac{1}{14}$ C. therefore I set it downe thus, if $7\frac{1}{14}$ C cost 19 l. what will 1 C. in working first bring the $7.\frac{1}{14}$ into 14ths and also the 19 multiplied by 14 to bring it into the same name as the first number is, there divided by 99. which is done by 11 and 9. Facit 2 13 $\frac{88}{99}$ d.

(64.) If 7 oz. cost $4\frac{1}{2}$ sh. how much shall I buy for 13 l.

$4\frac{1}{2} \cdot\cdot 7 \cdot\cdot 13$

9 — 520

3640

$404\frac{4}{9}$

Facit 25 L $4\frac{4}{9}$ oz.

Bring the first and third number into sixpences, and so multiply and divide, and the answer wilbe ounces which divide by 16.

(65.) If 2 qr 5 L cost 4 sh 7 d. what cost 1 C.

$2 \cdot 5 \cdot\cdot 4 \cdot 7 \cdot\cdot 1$

28 — 55 — 112

55

61 — 100

Facit 8 sh $4\frac{60}{61}$ d. — 6160

Bring both the first and third number into pounds, and the middle number into pence, and so multiply and divide, and the Facit will bee 8 sh $\frac{60}{61}$ d.

(66.)

(66.) If $4\frac{1}{3}$ oz. coſt 9 d. how much ſhall I buy for 19 ſh.

Here I conſider that 9 d is 3 three pences, and therefore I account it but as one 3 d. then 3 the fraction muſt bee brought to it and make it 9 againe, wherefore I let it ſtand, then I bring the fraction into three parts, ſaying 3 times 4 is 12. and 1 is 13 then I do multiply 19 by 4. becauſe that there are 4 threepences in a ſhilling, to make it like the firſt number, it amounts to 76. multiplied by 13 amounts to 228. divided by 9 is $10\,9\frac{7}{9}$ oz. being divided by 16 Facit 16 $13\frac{7}{9}$ ounces, as in example.

9 . . $4\frac{1}{3}$ . . 19

13 76

228

988

$109\frac{7}{9}$

Facit 6 L $13\frac{7}{9}$ oz.

(67.) If $\frac{5}{8}$ oz. coſt $\frac{13}{164}$ l. how much ſhall I buy for $\frac{7}{8}$ ſh.

Wheras I ſhould firſt multiply 13 by 20 to bring it into ſhillings, I multiply it by the 1 7 part of 20. which is 4. accounting 5 as 1. which is 52. then the 2 fractions muſt be brought, viz. the two 8. which being multiplied together, is 64. which I ſet under 52. and multiply them together, the product is 3328 either divider or denominator to the fraction, then remembring 5 muſt be accounted as one, then ſay if once 7 is 7 by which multiply 164 the denominator of the firſt fraction, the product is 1148 which is either divider or numerator to the fraction.

$\frac{13}{164}$ . . $\frac{5}{8}$ . . $\frac{7}{8}$

52

64

3328

1148 | 287 / 3328 | 832

Facit $\frac{287}{832}$ oz.

(68.) If 100 coſt 11 d. what coſt 9782.

Conſidering that 11 d conſiſts of 8 d and 3 d. then 8 d is $\frac{8}{10}$ l. wherefore I take the $\frac{1}{10}$ of 9782 making a pricke under the laſt figure to the right hand for the cypher, then I conſider that 3 d is $\frac{3}{10}$ l. wherefore I take $\frac{1}{10}$ of 9782. making likewiſe a pricke under the laſt figure of 9782. then add them together, and divide the aggregats by 100. which is done by cutting off the laſt two figures toward the right hand.

100 . . 11 . . 9782

326 . 1 . 4

122 . 5 . 6

Facit l 4 | 48 . 6 . 10

ſh 9 | 66

d 8 | 02

(69.) If

(69.) If 100 cost 3 sh 8 d. what cost 906.

100 . . 3 . 8 . . 906

151 . — . —
15 . 2 . —

Facit l 1|66 . 2 . —
sh 13|22
d 2|64

First for 3 sh 4 d take the $\frac{1}{2}$ of 906 which is 151. then take $\frac{2}{20}$ of 151 for 4 d. which is 15 l 2 sh add these together, and divide them by 100. cutting off the 2 last figures away.

(70.) If $\frac{5}{6}$ qr. cost $\frac{2}{5}$ l. what cost $\frac{4}{7}$ L.

$\frac{5}{6}$ . . $\frac{2}{5}$ . . $\frac{4}{7}$

140 8
15 240

105 *Facit* $1\frac{19}{35}$ d.

192
87

First bring the $\frac{5}{6}$ qr. into l by 28. Facit 140. and now the question is this, if 140 l cost $\frac{2}{5}$ l. what cost $\frac{4}{7}$ l. now considering that $\frac{1}{3}$ of 6 is 2. and of 9 is 3. wherfore 2 and 3 may serve instead of 6 and 9. and instead of 9 times 5 I say 3 times 5. making it 15. which I set under 140 to multiply it. Now the $\frac{1}{3}$ of 6 which is 2 should be carried to 2 and 4. but instead thereof which should multiply the dividend, I do divide 140 which is the divider, and say 2 in 140 times, and then 7 in 15 is 105 for divider. Now for dividend I say 2 times 4 is 8. this 8 I multiply by 240 to bring it into pence, cutting off the cypher, and also of 240 which makes $\frac{192}{105}$ which is $1\frac{29}{35}$ d.

(71.) If 7 l 13 oz. cost 1 l 2 sh. what cost 1 L.

7. 13 . . 1 . 2 . . 1

16 17. 12.

125 3. 10. $4\frac{4}{5}$
14. $\frac{24}{35}$

Facit 2 sh $9\frac{99}{125}$ d.

Bring the first number into ounces by 16. Facit 125 for divider, then multiply 1 sh 2 d by 16 the ounces of 1 l. which is the third number, saying 16 times 2 sh is 32 sh set downe 12 sh and carry 1 l. then 16 times 1 l is 16 l. and 1 in mind makes 17 l this 17 l 12 sh should be divided by 125 which is 5 times 25 and that is 3 times 5 multiplied together, so that to divide by 5 three times, is as much as to divide by 125 at once.

(72.) If

(72.) If 14 L 7 oz. cost 2 l. 7 sh. 8 d. what cost 1 oz.

14 . 7 . 2 . 7 . 8 . . 1

16 47

231 *Facit* $2\frac{110}{231}$ d.

577

110

First multiply 14 l. by 16 and adde in the 7 oz. Facit 231 divider, and for dividend account 2—7 sh. for 47 sh. multiplied by 12 Facit 572. divided by 231 Facit 2,110d. 231

(73.) If 5 oz. cost 2 sh 5 d. how much shall I buy for 17 l.

2 . 5 . . 5 . . 17

12 15 75

29 *Facit* 43 L $15\frac{13}{29}$ oz.

x 2578

x 183

24

45

11

First say 2 sh 5 d is 29 d for divider, now the 17 pound should bee multiplied by 240 to bring it into pence, like the first, but because I will have the first quotus to come out pounds, therefore I multiply it by the $\frac{1}{12}$ part of 240 which is 15. for it is all one to multiply any summe by 204. which is 15. and divide it by 16 or first of all to multiply it by the $\frac{1}{16}$ part, which is 15. as experience will shew.

(74.) If $16\frac{1}{4}$ yards of kersey cost 4 l and 9 d. what cost one yard?

$16\frac{1}{4}$ . . 4 . — . 9 . . 1

16 . 3 . —

67

Facit 4 sh $9\frac{17}{67}$ d.

3230

557

66

5

Multiply the 16 by 4 and adde in 3. Facit 68 d. then multiply the middle number by the last accounting 4. and divide the product by the first, Facit 4 sh. 9. 51d. 67

(75.) If $7\frac{4}{5}$ yards cost $2\frac{3}{5}$ l. how many yards shall I buy for 16 d.

$2\frac{3}{5}$ . . $7\frac{4}{5}$ . . 16

20	39	5616	702	117	
5	234	24000	3000	500	
100	624				

Facit $\frac{117}{500}$ yards.

First multiply the 2 l by 9 and adde to the 2. facit 20. then by 5. facit 100 then by 240 facit 24000 for divider, then bring $7.\frac{4}{5}$ into to the fraction, and multiply it by 16. set it a place nearer the right hand, and say 6 times 9 is 54 being added together, make 624. multiplied by 16 make $\frac{5616}{24000}|\frac{117}{500}$ yard.

(76.) If 1 qr. cost $\frac{11}{17}$ l. what cost $3\frac{7}{8}$ C.

1 . . $\frac{11}{17}$ . . $3\frac{7}{8}$

34	31

Facit l 10.—$7\frac{1}{17}$

34|10
2|42

In this question instead of multiplying $3.\frac{7}{8}$ C by 4 to bring it into quarters, I take the $\frac{1}{4}$ part of 8 times 17. saying 2 times 17 is 34 for divider, then I bring $3.\frac{1}{8}$ into the fraction, I multiply by 11. and divide it by 34. facit 10 l $7.\frac{1}{17}$ d.

(77.) If 187 L of allume cost 3 l. what cost 987 L.

187 . . 3 . . 987

Facit l 15. 16. $8\frac{40}{187}$

296	10	6
189	68	0
29	23	
32	54	
1	22	
	25

In this question multiply by the 2 last, and divide by the first.

(78.) If

(78.) If 6 L of saffron cost 3 l 18 sh 3 d. what cost 5 oz.

6 . . 3 . 18. 3 . . 5

19. $6\frac{1}{4}$

4. $10\frac{5}{16}$

—. $9\frac{15}{32}$

Facit 4 sh $\frac{29}{32}$ d.

First take $\frac{1}{4}$ of 3 l 18 sh 3 d. and so you come to know what 24 oz. doth cost, then consider that 6 oz. is $\frac{1}{4}$ of 24. therefore take $\frac{1}{4}$ of the quotus of the former division, and so you come to know what 6 oz. will cost, from which substract $\frac{1}{32}$ and the remainder is that which 5 will cost.

(79.) If 1 C cost 19 sh what cost 13 C 2 qr. 9 L.

1 . . 19 . . 13 . 2 . 9

12. 7. —

—. 9. 6

—. 1. $4\frac{2}{7}$

—. —. $2\frac{1}{28}$

Facit l 12. 18. $2\frac{1}{28}$

Consider that 13 C wants but 13 sh of 17 L. and therefore set down 12 l 7 sh. and for the 1 C 9 sh 6 d. and for 81 the $\frac{1}{7}$ of 2 oz. and for 1 l the $\frac{1}{7}$ of the last quotus.

(80.) If $\frac{3}{7}$ C cost $\frac{15}{16}$ l. what cost $\frac{11}{13}$ oz.

$\frac{3}{7}$ . . $\frac{15}{16}$ . . $\frac{11}{13}$

1792	16500 | 4125	1375
5376	86016 | 21504	7168
32256		

Facit $\frac{1375}{7168}$ d.

Consider that 1792 is 1 C. then I multiply $\frac{3}{7}$ by 1792. and by it multiply 5376. multiply this summe by 16 setting it a place nearer the right hand, then I should next bring the denominator 12 to the divider, but I see the middle number hath need to be multiplied by 20 and 12 to bring it into pence, and therefore to save one of these multiplications, viz. by 12 I omit this 12. and multiply 15 by 11, facit 165 then I multiply the middle number by 20 to bring it into shillings, and by 5 denominator of the first number, saying 5 times 20 is 100. and for this 100 I place 2 cyphers at the right hand of 165. and facit $\frac{16500}{86016}$ which abbreviate by 4 and by 3. facit $\frac{4125}{21504}$ for you must consider it is brought into pence, by omitting the multiplication of the divider by 12. for I had multiplied the divident, againe it is good to omit them both.

(81.) If $\frac{2}{5}$ C cost $\frac{11}{17}$ l. how much shall I buy for $\frac{2}{5}$ sh.

$\frac{11}{17}$. $\frac{2}{5}$ . . $\frac{2}{5}$

55 112
25 13

1375 *Facit* 1 L $\frac{1296}{1375}$ oz.

145.66
181
29

Suppose the 2 last new numerators to bee multiplied together, and they will make 4. which I doe account but one, and do multiply $\frac{11}{17}$ 1 by 1 of 20 to bring it into shillings, saying 5 times 11 is 55. this number I multiply by the product of the 2 denominators 5 and 5 multiplied together, which is 25. and the product of this multiply it by 1375. now I must remember that the 2 and 4 which multiply by 112 to bring hundreths into pounds, make 112. multiplied by the fraction of the first make 1456. divide by 1375. Facit 1. $\frac{1296}{1375}$.

(82.) If 23 L of pepper cost 3 l 7 sh 9 d. how many pound shall I buy for 50 l.

3 . 7 . 9 . . 23 . . 50
120

67
813 *Facit* 339 $\frac{111}{175}$ L.

276000
32223
779
3

Bring the 3 l 7 sh 9 d into pence, Facit 813. then imagine you see 240 or 24. therefore to stand under 50. multiplied together, make 120. multiplied by 23 over head make the other cypher added to it the summe of 276000 to bee divided by 813.

(60.) If

(83.) If 3 l. $3\frac{7}{8}$ oz. cost $3\frac{1}{2}$ sh. how much shall I buy for 11 $\frac{1}{2}$ d.

$3\frac{7}{8}$ . . 3 . $8\frac{7}{8}$ . . $11\frac{6}{8}$

23 16 23

36 51

486

$77\frac{1}{3}$ *Facit* 12 $\frac{17}{18}$ oz.

First bring 1/2 into the Fraction, facit 23. the bring $11\frac{6}{8}$ into the fraction, it is likewise 23. which number ballances one another, the I should cary 6 the denominator of the first fraction to the dividend, & 2 times 9 the denominator of the other 2 fractions should be brought to the divider, but I omit carrying of 6. because the first number is shillings, I multiply the $\frac{1}{6}$ part of 2 times 9 which is 3 by 12 the pence of shillings, facit 36 for divider, then I bring the 3 l 3. 7 d in ounces, by multiplying it by 16 facit 51. this 51 I bring into the Fraction, facit 486. which I divide by 6 and 6. because 6 times 6 is 36. Facit 12. 17 oz. $\frac{17}{18}$

(84.) If $3\frac{7}{8}$ yards cost 30 sh 9 d. how many yards shall I buy for 45 l.

30. 9 . . $3\frac{7}{8}$ . . 45

123 31 31

Facit 113 $\frac{17}{41}$ yards.

23950

2621

45

First bring 30 sh 9 d into threepences, facit 123. then bring the middle number into the Fraction, facit 31. now the denominator 8 should be brought to the first number, but I omit it, and take the 8 part of 80. which 45 should be multiplied by, to bring it into threepences, and do first multiply it by 31. and then do add one cypher to it, to multiply it by 10.

First I bring 1 l 14½ sh into shillings, and then into the fraction, facit 205. multiply it by 1 of 9. facit 615 for divider, next because the middle number brought into the fraction, facit 49. the third number brought into the fraction, facit 22. which because it is 1 l. it must bee multiplied by 20 to bring it into shillings, and by the 1 of 6 which is 2. saying 2 times 20 is 40 by which you must multiply 22 for 88. multiply this by 7.1 of 49. facit 6160 divided by 615 facit 10 1/123.

(85.) If 5⅘ L cost 1 l 14½ sh, how many pounds shall I buy for 3⅐.

1 . 14½ . . 5⅘ . . 3⅐

34 / 205 / 3 / 615

49 / 22 / 880

Facit 10 1/777 L.

6160 / 1

(86.) If 3 C 2 qr 9 oz. cost 84 l 7 sh 9 d. what cost one ounce.

Bring the first number into ounces, and the middle number into pence, so divide pence by ounces.

3 . 2 . 9 . . 84 . 7 . 9 . . 1

14 / 28 / 392 / 6281

1687

Facit 3 1410/6281 d.

20253 / 1410

(87.) If 114 L 15 oz cost 32 l what cost 2 L 9 oz.

First bring 114 l into ounces, and add in 15. facit 1830 for divider, and so bring the third number into ounces, fa it 41. which multiply by 32. facit 1312 and by that the divider is greater then the divident, I multiply 1312 by 20 to bring it into shillings, which product divide by your divider, facit 14 sh 3 411/1839 d.

114 . 15 . . 32 . . 2 . 9

16 / 1839

16 / 41 / 32

Facit 14 sh 3 411/1839 d.

23128 / 26244 / 7852 / 491 / 54

(88.) If

(88.) If $\frac{2}{7}$ C coſt $\frac{13}{14}$ l. what coſt $\frac{3}{7}$ pounds.

$\frac{2}{7}$ . . $\frac{13}{14}$ . . $\frac{3}{7}$

112 | 13
784 | 120

Facit $1\frac{97}{112}$d.

2560
776

Conſider that the firſt and laſt numbers doe ballance each other. now becauſe that the firſt number is hundreds, and the laſt pounds, I ſet downe 112. and multiply it by 1 of 14. facit 784. and becauſe I cannot take 1 of 13. I take 1 of 240 which is 120 and multiply by 13. facit 15600 which divide by 784. facit 1. 97 d.

(89.) If $\frac{1}{3}$ oz. coſt $\frac{1}{8}$ d. how much ſhall I buy for $\frac{1}{7}$ l.

$\frac{1}{8}$ . . $\frac{2}{3}$ . . $\frac{1}{7}$

21 | 16
240

3840
$548\frac{4}{7}$
$182\frac{6}{7}$

Facit 11 L $6\frac{6}{7}$ oz.

Conſider that the numerators of the firſt and laſt number may bee omitted, then multiply the 2 laſt denominators, facit 21 for divider, then multiply the firſt denominator and and the ſecond denominator together, facit 16. multiply it by 240. facit 3840. which divide by 7 and 3 becauſe 7 times 3 is 21. facit 11 L. 6.4 oz.

(90.) If $2\frac{1}{4}$ yards of kersey cost $\frac{11}{17}$ sh. how many yards shall I buy for 4 l 17 sh 9 d.

First bring the first number into the fraction, facit 125. next the denominator 4 should bee brought, but because 9 d is $\frac{3}{4}$ sh, therefore I imagine it to bee a fraction, and then I say 4 times 4 is 16 by which I multiply 125. facit 1840 then bring the middle number into the fraction, facit 11 then bring 4 l 17 sh into shillings, facit 97 sh. then bring it into the fraction, for you must account 9 d to be $\frac{3}{4}$ sh. facit 391. this multiply by 11 facit 4301. this multiply by your first denominator, facit 55913 which divide by 1840. Facit $30\frac{713}{1840}$

$8\frac{11}{17}$ . . $2\frac{1}{4}$ . . 4 . 17 . 9

115	11	97
16		391
1840		4301
		13
		55913
		7

Facit $30\frac{713}{1840}$ yards.

(91.) If $\frac{11}{13}$ L of cloves cost $\frac{5}{12}$ l. how many L shall I buy for 3 l 7 sh $4\frac{5}{12}$ d.

Pirst multiply the numerator of the first and the denominator of the second together, facit 65 which multiply by 240 to bring it into pence like the last, facit 15600 for dividend, then bring the third number into pence, facit 808 1 d. this multiply by the first denominator, say 12 thirds is 4 &c. facit 4700. this multiply by 11 leaving out the two cyphers to ballance the two cyphers of the divider, facit 1067 divide by 156 facit $6.\frac{11}{156}$ d.

$\frac{5}{12}$ . . $\frac{11}{13}$ . . 3 . 7 . $4\frac{5}{12}$

65		67
240		808
15600		9700
		1067

Facit $6\frac{11}{156}$ L.

(92.) If

(92.) If 1 C 1 qr 3 $\frac{1}{2}$ L. coſt 11 $\frac{11}{12}$ l. what coſt $\frac{7}{16}$ oz.

1 . 1 . 3 $\frac{1}{2}$ . . 11 $\frac{11}{12}$ . . $\frac{7}{16}$

143 77
431 15
6896
27584

Facit 1855 / 3072 d.

Bring the firſt number into pounds, facit 143. then into the fraction, facit 431. this multiply by 16 to bring it into ounces like the laſt, facit 6896 this multiply by the $\frac{1}{2}$ part of 12 which is 4 becauſe I will omit carrying of the firſt denominator, facit 27584 for divider, otherwiſe denominator, now multiply the 2 laſt denominators together, facit 77. now becauſe I do not carry 16 the laſt denominator to the firſt number the divider, therefore muſt multiply this 77 by the $\frac{1}{16}$ of 240 which is 15. facit 1855. for divident or numerator facit 1855. 27584

(93.) If 2 L 7 $\frac{1}{3}$ oz. coſt $\frac{1}{15}$ l. what coſt $\frac{13}{45}$ oz.

2 . 7 $\frac{1}{3}$ . . $\frac{1}{15}$ . . $\frac{13}{45}$

39 104
317 80
55
8320
17435

Facit 16624 / 34870 d.

Bring the firſt number into ounces, and then into the fraction, facit 317. now next I ſhould bring 22 times 45 hither to my divider, but I conſider that I muſt multiply my divident by 3. therefore I take the 1 of 45 which is 15. then I conſider that I muſt multiply my divident by 240. but I will leſſen my worke, and take 1 of 240 which is 80. and multiply my divider by 11 and the 1 of 15 which is 5 facit 55 which multiply and added make 17435 for divider, then for my divident the firſt denominator by my laſt denominator, facit 104. this multiply 80 the 1 of 240 facit 8320 for divident or new numerator, ſo that the facit is 16624 / 34870 d.

(94.) If 100 coſt 7 l 6 ſh 8 $\frac{1}{2}$ d. what coſt 13.

100 . . 7 . 6 . 8 $\frac{1}{2}$ . . 13

14 . 8 .— . 10 &c.
2 . 11 . 2 . 6 &c.
1 . 5 . 7 . 3 &c.

Facit ſh 19 .— . 10 . 7 &c.

Conſider that if 100 coſt 7 l 6 ſh 8 $\frac{1}{2}$ d. then 10 l will coſt 1 of that, & 2 l the 1 of that 20 l. and 1 l 1 of that 2 l. and ſo you muſt adde them, and ſhall have your anſwer.

(95.) If

(95.) If 100 cost $9\frac{3}{4}$ d. what cost $9874\frac{1}{2}$.

100 . . $9\frac{3}{4}$ . . $9874\frac{1}{2}$

246 . 17 . $3\frac{1}{2}$
123 . 8 . $7\frac{1}{4}$
27 . 8 . $7\frac{1}{16}$

Facit l 3|97 . 14 . $6\frac{17}{24}$
sh 19|54
d 6|54

First divide 9.2 into parts of a pound, 2.6 d is the $\frac{1}{4}$ and 3 d is the $\frac{1}{40}$ of it, and for the $\frac{1}{2}$ take the $\frac{1}{4}$ of 6 d for the 2 is the $\frac{1}{3}$ of 2 d. then $\frac{1}{6}$ of 4 d. and the $\frac{1}{9}$ of 6 d. adde these together, and divide by 100.

(96.) If 100 cost $\frac{11}{16}$ l. what cost 987 L $13\frac{1}{2}$ oz.

100 . . $\frac{11}{16}$ . . 987 . $13\frac{1}{2}$

493 . 18 . $5\frac{1}{4}$
123 . 9 . $7\frac{1}{16}$
61 . 14 . $9\frac{21}{32}$

Facit l 6|79 . 2 . $10\frac{7}{32}$
sh 15|82
d 9|94

Consider that if 11 l were 1 l. then 987 l 13.1 ounces will cost 087 l and the 13 ounces $\frac{1}{2}$ 13 l which is 16 — 3 d and the 1 ounce would cost 1 of 1 l which is 7.1 d. then if 16 which is 11 cost 987 l 16 sh 10 1 d and $\frac{8}{11}$ must cost 1 so much, and $\frac{2}{16}$ 1 of that $\frac{1}{16}$ $\frac{1}{2}$ of that, adde these together, and divide by 100. facit 61 15 sh 6.47 d.

(97.) If 100 cost l 2.—.9. what cost 1084.

100 . . 2.—.9 . . 1084

2168.—
27.2
13.11

Facit l 22|08.13
sh 1|73
d 8|76

First multiply your third number by 2 l. facit 2168. then consider that 9 d consists of 6 d and 3 d first for 6 d take $\frac{1}{2}$ of 2168. and for 3 d $\frac{1}{40}$ of that, adde $\frac{1}{2}$ these together, & divide by 100.

(97.) If

(98.) If 100 cost $10\frac{1}{4}$ d. what cost 9874.

100 . . $10\frac{1}{4}$ . . 9874

246. 17.—
164. 11. 4
30. 17. $1\frac{1}{2}$

Facit l 4|42. 5. $5\frac{1}{2}$
sh 8|45
d 5|45

First consider that 10 d consists of 6 d and 4 d. which is 1 l. adde 1 l. $\frac{1}{20}$ and therefore for 6 d I first take 1 $\frac{1}{20}$ of 9874. and the 3 1 of it for 4 d. $\frac{1}{20}$ then I consider that the 3 d is the $\frac{1}{4}$ 1 of 3 d. that is $\frac{1}{8}$ I $\frac{1}{8}$ 6 d. and therefore I take 1 part of 249. 17 and adde them together, and divide by 100.

(99.) If $\frac{3}{7}$ qr. cost 3 sh $4\frac{1}{2}$ d. how much shall I buy for $\frac{1}{7}$ l.

3 . $4\frac{1}{2}$ . . $\frac{3}{7}$ . . $\frac{1}{7}$

40	18
122	240
854	4320
	4

Facit 20 L $3\frac{1}{4}\frac{29}{37}$ oz.

27280
3608
3

First bring 3 sh 4.2 d into the fraction, facit 122. multiplied by the second denominator, facit 854 for divider, then multiply the first denominator and the 2 last numerators together, facit 18. multiply this 18 by 240. facit 4320. now I should multiply the middle number by 28 to bring it into pounds, and should carry the last denominator to the first numerator, but I omit that, and take the 1 $\frac{1}{7}$ of 28 d which is 4. and then with multiplying 4320.

(100.) If

(100.) If 2 C $1\frac{1}{4}$ qr cost $1\frac{1}{2}$ l. what cost $4\frac{1}{7}$ C.

2 . $1\frac{1}{2}$ . . $1\frac{1}{2}$ . . $4\frac{1}{7}$

9 6 23
77 48

1104
220. 16. —
20. 1. $5\frac{5}{11}$

Facit 12. 17. $4\frac{16}{77}$

First bring the first number into the fraction, facit 77. next bring the third number into the fraction, facit 23. this 23 should be multiplied by 4 to bring it into quarters, but I rather multiply the middle number, saying, 4 halfes is 2. then 4 times 1 is 4. and 2 is 6 then I bring the first denominator 8 to be multiplied by 6. facit 48 with this 48 I multiply 23. facit 1104. now the last denominator 5 should be carried to the first number, but instead thereof I divide this number 1104 accounting it pounds, facit 220 l 16 sh this number I divide by 11 and 7 because 11 times 7 is 77.

(101.) If 14 l. cost 4 l. what cost $6\frac{1}{8}$ oz.

14 . . 4 . . $6\frac{1}{8}$

5

— . $8\frac{4}{7}$
1 . $5\frac{1}{7}$
— . $1\frac{1}{14}$
— . — $\frac{15}{28}$

Facit 2 sh $3\frac{9}{28}$ d.

First consider that if 14 l cost 4 l. 14 oz. will cost 1 $\frac{1}{14}$ of 4 l. which is 5 sh. then make a line under 5 sh. the price of 14 oz and consider if 14 oz. cost 5 sh. 2 oz will cost 1 of that 5 sh. which is $\frac{2}{7}$ 8.4 then if 2 oz cost so much, 4 oz will cost twice as much, which is 1 sh 5. $\frac{1}{7}$ d so you come to know what 6 oz will cost after the rate of 14 l. for 4 l. then consider the $\frac{2}{8}$ will cost 1 part of 2 oz. which is 1. $\frac{1}{4}$ d. then consider that 1 will cost $\frac{3}{4}$ of it, which is 15 d. add these together, facit 2 sh 3. $\frac{9}{28}$ d.

(102.) I

(102) If $87\frac{1}{4}$ L of ſugar coſt 4 l 8 ſh $9\frac{1}{2}$ d. how many pounds ſhall I buy for 12 ſh.

4 . 8 . $9\frac{1}{2}$ . . $87\frac{1}{4}$ . . 12

88 — $175\frac{1}{2}$

1065 — 2106

2131 — *Facit* $11\frac{831}{2131}$ pounds.

25272
3961
183

First bring 4 l 8 ſh $9\frac{1}{2}$ d into the fraction, facit 2131. then multiply the middle number by the denominator of the firſt number, ſaying 2 times 3 is 6 that is 1 and go on, and the reſt of the figures by 2, facit $175\frac{1}{2}$ then multiply this laſt number by 12 to bring it into pence, becauſe the firſt number 2527 this divide by 2131.

(103.) If 13 elles coſt 2 l 8 ſh. how many elles ſhall I buy for 71 l and 7 d.

2 . 8 . . 13 . . 71 . 7

48 — 240

576 — 17047
13

Facit $384\frac{423}{576}$ elles.

221628
48837
272
4

First bring the 2 l 8 ſh into ſhillings, facit 48. brought into pence, facit 576. then bring 71 l and 7 d into pence, facit 17047 multiply this by 13 and divide it by 576.

(63.) If

(104.) If $7\frac{2}{3}$ yards coſt 12 ſh $9\frac{1}{4}$ d. what coſt $13\frac{1}{8}$ yards.

$7\frac{2}{3}$	12	$9\frac{1}{4}$	$13\frac{1}{8}$
23	153		105
32	615		
736	315		
263			

Facit 21 ſh 11 $\frac{117}{736}$ d.

193725
46567
235
1

Firſt bring 7.2 of a yard into the fraction, facit 23 then bring the two denominators 4 and 8 facit 32. by this multiply 23. facit 736. then into the fraction, facit 105. then bring the firſt denominator thither, facit 315. multiply 615 the middle number by this 315 multiplied firſt by 5 a place nearer the right hand, and then by 6 a place nearer the left hand, and account 615 to be multiplied by 1 as it ſtands, facit 193725, which ſhall be divided by 736 facit 263 d. that is 21 ſh 11.155 d.
736

(105.) If 4 C 6 L 7 oz. coſt 100 l. what coſt 1 C.

4	6	7	100	1
112			*Facit* 24	12 , 11 $\frac{15}{7271}$
454				
7271				

2792000
3378685
46922
93220
21663
600
878

Firſt bring 4 C 6 l 7 oz into ounces, facit 7271. then ſet downe for the 1 C 1792. and add 2 cyphers to multiply it by 100. and divide by 7271. facit 24 l. 12 ſh. 8 $\frac{15}{7271}$ d.

(106.)

(106.) If $\frac{2}{7}$ C coſt $2\frac{3}{5}$ l. how much ſhall I buy for 85 l 17 ſh 9 d.

$\frac{2}{5}$ . . $\frac{2}{7}$ . . 85 . 17 . 9

13 1717

520 *Facit* 13 C $23\frac{19}{65}$ L.

6872
22612
213
47
8
4

Firſt I conſider that the 85 l 17 ſh 9 d may bee brought into threepences, and therefore have brought the firſt number into the fraction, I do multiply it by 40 becauſe I doe not carrie the numerator of the middle number to the laſt number, and therefore I multiply the firſt number by the $\frac{1}{2}$ of 80 which is 40.

(107.) If 1 7 L 6 oz. coſt 6 l 3 ſh 8 d. how much ſhall I buy for 100 l.

6 . 3 . 8 . . 17 . 6 . . 100

123 139
371 695

742 *Facit* 280 L $15\frac{355}{371}$ oz.

208900
6024
2278
481
4
7

Firſt imagin the queſtion to ſtand thus, if 6 l 3 ſh 8 d be 17.$\frac{1}{2}$ what will 100. then bring the 6 l 3 ſh 8 d into fourepences, facit 371. then 8 the middle denominator ſhould bee brought hither, and 60 ſhould bee carried to the laſt number, but to leſſen the worke, I take the $\frac{1}{2}$ part of both, and do multiply the 371 by 2. and 100 by 15. which is $\frac{1}{4}$ of 60 then bring the middle number into the fraction, which is 17.$\frac{1}{2}$ facit 139. this multiply by 15. placing it a place nearer the right hand, and do it onely by 5. facit 2085. this divide by 742. facit 15.$\frac{355}{371}$ but it might have beene multiplied by 8 the $\frac{1}{2}$ of 16 and divided by 371 the $\frac{1}{2}$ of 742. and ſo the whole fraction is 280 and 15.$\frac{355}{371}$.

(108.) If

(108.) If 4 C 5 L cost 15 l. what cost 9 C 2 q.

4 . 5 . . 15 . . 9 . 2

112 | 112

453 | 1064

5320

Facit 135 . 4 . $7\frac{95}{151}$

£59600

23758

4006

2185

325

48

2

First bring the 4 C 5 L into pounds, facit 453. then next the last number into pounds, facit 1064 this multiply by 15 put in a place nearer the right hand and multiply onely by 5. facit 15960. divide by the divider 453. facit 35 l 4 sh 7. $\frac{95}{151}$ d.

(109.) If 16 L $3\frac{13}{16}$ oz. cost $6\frac{1}{2}$ l. what cost 1 L $2\frac{1}{2}$ ounces.

16 . $3\frac{13}{16}$ . . $6\frac{1}{2}$ . . 1 . $2\frac{1}{2}$

259 | 26 | 18

4157 | 16 | 93

416

93

Facit 9 sh $3\frac{2819}{4157}$ d.

38688

12759

580

282

First bring the 16 l $3\frac{13}{16}$ oz. into ounces, and into the Fraction, facit 4151 for divider, now the 2 denominators 2 and 5 should be brought to the first number, but because the middle number must be multiplied by 20 to bring it into shillings, instead of bringing the 5 to the first number, I multiply the middle number by the 2 of 20 which is 4. saving 4 on halfes is 2. then 4 times 6 is 24: and 2 is 26. so that by not bringing the middle number into the fraction, I need not carry the denominator to the first. this 26 should be multiplied by 16 the first denominotor, facit 416. multiply this by 93 the last number, facit 38688 divide by 4157 facit 9 sh $3\frac{2819}{4157}$ d.

(110.) I

(110.) If 2 C 3 qr cost 7 l 8 sh 9 d, how much shall I buy for 100 l.

7 . 8 . 9 . . 2 . 3 . . 100

148 595 119 — 11 — 80 11

147 . 25

880000
245355
27981
500
412
3

Facit 36 C 3 qr 25 $\frac{3}{119}$ l.

First bring the 7 l 8 sh 9 d into threepences, facit 595 l and the 2 l. and 3 oz into quarters, facit 11 oz. and then the last number by 80 to bring it into threepences, facit 8000. this multiply by 11 in your mind facit 88000. divide by 595 facit 1470 oz. remaines 535 to bee divided by 595. this 535 should bee multiplied by 28 to bring it into pounds, but to lessen the worke, I take 1 of 595 for divider, which is 119 for divider, then I take 1 of 535 and multiply it by 18 facit 1996. divide by the divider 119 facit 25. $\frac{21}{119}$. abbreviate by 7 facit 3 $\frac{3}{17}$ then divide 147 oz by 4 facit 36 C 3 qr. and 25. $\frac{3}{17}$ l.

(111.) If 3 C 4 L 3$\frac{7}{8}$ oz cost 17$\frac{2}{3}$ l. how much shall I buy for $\frac{11}{15}$ l.

17$\frac{2}{3}$ . . 3 . 4 . 3$\frac{7}{8}$ . . $\frac{11}{15}$

53 340
40 5443

2120 43551

120
556
479061 (225
424220
212
2

Facit 14 l 1 $\frac{2061}{3180}$ oz.

Firſt bring this 17. 2 into the fraction, facit 53. now I should carry this denominator 3 to the two last numbers, and should multiply this first number by 8 times 15. but I omit carrying of 3. and doe bring 8. 1 of 15 which is 5. saying 8 times 5 is 40 by which number I multiply 53. facit 2120 for divider, then I bring the middle number into ounces, and into the fraction, facit 43551. multiplied by 11 the last numerator, facit 479061 for dividend. being divided by your divider, facit 225. $\frac{2061}{2120}$ ounce, by 16 facit 14 l. $\frac{2061}{3180}$ ounce.

(112.) If $7\frac{15}{16}$ oz. cost 4 l and 7 d. what cost $\frac{3}{5}$ L.

$7\frac{15}{16} \cdot . 4 . 7 . . \frac{3}{5}$

127 240 256

5 967

635 768

1169

97 . 5

74265 6

107141

440

63 *Facit* 4 l 17 sh. $5\frac{141}{635}$ d.

First bring $7\frac{15}{16}$ oz. into the fraction, facit 127. multiply by the last denomination, facit 635 for divider, then multiply your middle number by 240. and adde to the 7. facit 967. then I consider that the last number being multiplied by 16 to bring it into ounces like the first, and by 16 the first denominator, saying, 16 times 16 is 256. this number I multiply by 3 the numerator of the last number, and the product thereof I place under 967 and multiply it, and the product is divident, being divided by the divider, facit 1169. divide by 12 facit 97 sh 5 d. that is 4 l 17 sh 5 341 d. 635

(113) If 1 C cost 2 l and $\frac{1}{8}$ d. what cost 7 L $2\frac{1}{2}$ oz.

1 . . 2 . $\frac{1}{8}$ . . 7 . $2\frac{1}{2}$

1792 480 16

10752 3845 114

229

34605 2 34

84590 880505 (30

Facit 2 sh $6\frac{20345}{28672}$ d. 28672

First consider that 1792 oz. is 1 C and therefore I set downe 1-92 then I bring the 2 denominators '8 and 2. which is 16. by which I multiply the same first number, facit 28762 for divider, then I bring the 2 l into d. by 240. facit 480. then into the fraction, facit 30.20345 d. that is 2 sh 6.20345 d. 28762 28672

(114.) If

(114.) If $14\frac{5}{6}$ yards of ſackcloth coſt 1 l. 2 ſh. $8\frac{1}{7}$ d. how many yards ſhall I buy for $4\frac{10}{17}$ l.

1 . 2 . $8\frac{1}{7}$ . . $14\frac{5}{6}$ . . $4\frac{10}{17}$

22	89	78
272		40
1905		3120
17		89
32385		277680
6477		

Facit 60 $\frac{44}{339}$ yards.

2943760

632

First I bring the firſt numb er into pence and into the fraction, facit 1905 this I multiply by 17 at once, ſetting it a place nearer the right hand, and multiply onely by 7 being added, facit 32385 for divider, then I bring the middle number into the fraction, facit 89. then I bring the third number into the fraction, facit 78. this 78 ſhould bee multiplied by 240 but becauſe I did not carry 6 to the firſt number therefore I take but the $\frac{1}{6}$ of 240, which is 40 and therewith I multiply 78. facit 3120. this I multiply by 89 the middle number, facit 277680 being divided by the diviſor, facit 60 yards, 44 yards. $\frac{44}{339}$

(115.) If one ounce of gold coſt 57 ſh 9 d. what coſt 83 oz. 13 d 20 gr.

1 . . 57 . 9 . . 83 . 13 . 20

167	7	8	
41	16	11	
20	18	5	6
10	9	2	9
1	—	11	—&c

Facit l 241 . 13 . 2 . 3 &c

First imagine the ounce at what price ſoever to be at 10 ſh the ounce and 10 d weighe in one ounce, and 24 graines in one penny weight, and then the 83 oz. 13 d 20 gr. are worth 8 l 13 ſh 10 d but the price of the ounce here at 57 ſh 9 d therefore double it, facit 16 l 17 ſh 8 d. then for 10 ſh take the $\frac{1}{2}$ of 8 l 13 ſh 10 d. and ſo you have for 50 ſh. then for 5 ſh take $\frac{1}{10}$ of the quotus for 10 ſh. and for 30 d the $\frac{1}{10}$ of the quotus for 5 ſh. and 3 d the $\frac{1}{10}$ of the quotus of 30 d. and add all together, facit l 13 ſh 2 d.

(116.) If 1 C cost 3 l 7 sh $9\frac{1}{2}$ d. what cost 3 qr. $7\frac{1}{3}$ L.

First consider that if the 1 C cost 3 l 7 sh 9 d 6 mites, 2 qr. will cost $\frac{1}{2}$ of that, and $\frac{1}{4}$ $\frac{1}{2}$ of that, and 7 l the $\frac{1}{4}$ of that, because 7 is $\frac{1}{4}$ of qr then take $\frac{1}{7}$ of 16 l 11 sh 4 d and 6 mites, and then you know what 4 l is worth; but being no part of the question, I put it out. Again, I consider that 2 l is $\frac{1}{3}$ of 2 l. that is $\frac{1}{3}$ of 4 l. and therefore I take $\frac{1}{6}$ of 2 l 5 sh 7 d. and add them all together, facit 2–15–5–9 droits.

1 . . 3 . 7 . $9\frac{1}{2}$ . . 3 . $7\frac{1}{3}$

1 . 13 . 10 . 9
—. 16 . 11 . 4.6
—. 4 . 2 . 10 . 1 &c.
—. 2 . 5 . —. 7 &c.
—. —. 4 . 10 1 &c.

Facit l 2 . . 15 . 5 . . 9 . 8. &c.

(117.) If 100 cost 13 sh $11\frac{1}{2}$ d. what cost 994.

First cast up at 12 sh. saving 12 times 4 is 48. and go 2 l. then take $\frac{1}{12}$ of 12. and multiply the rest of the figures, then for 1 sh 8 d. take $\frac{1}{12}$ of 994. then for 3 d take $\frac{1}{20}$ of 994. and for $\frac{1}{5}$ of them $\frac{1}{6}$ of the quotus of 3 d. add these together, facit 693 l 14 sh 7 d. divided by 100 shall it, facit 6 l 18 sh 8 d.

100 . . 13 . $11\frac{1}{2}$ . . 994

596.8.—
82.16.8
12.8.6
2.1.5

Facit { l 693.147 / sh 18 74 / d 8 95 }

(118.) If

(118.) If 100 cost 5 sh $8\frac{1}{4}$ d. what cost $134\frac{5}{11}$

100 . . 5 . $8\frac{1}{4}$ . . $134\frac{5}{11}$

33. 12. 1
3. 7 . 2. 6
1. 3 . 4. 10
—. 2 . 9. 7. 3

38. 4. 5. 11. 3

Facit { sh 7 64 / d 7 73

First imagine the $134\frac{5}{11}$ to bee 134 l 8 sh 4 d. then for 5 sh take $\frac{1}{4}$ of 134 l 8 sh 4 d. which is 33 l 12 sh 1 d the $\frac{1}{4}$ of that for 6 d. $\frac{1}{12}$ which is 3 l 7 sh 2 d 6 mites, and for 2 d the $\frac{1}{3}$ of that, and for $\frac{1}{4}$ take $\frac{1}{8}$ of 1 l 2 sh 4 d 10 mites, and adde them together, facit 38 l 4 sh 5 d – 11–3 divided by 100 facit 7 sh 7 d.

(119.) If 100 cost 1 l and $10\frac{3}{8}$ d. what cost 3971.

100 . . 1 . $10\frac{3}{8}$ . . 3971

132. 7. 4
33. 1. 10
8. 5. $5\frac{1}{2}$
2. 1. $4\frac{3}{8}$

Facit { l 141 / sh 9 / d 4 } 46. 15. $11\frac{7}{8}$

The price of 100 being 1 l and $10\frac{3}{8}$ d. first the $\frac{1}{3}$ 3971 will cost so many pounds, and then for 8 d take $\frac{1}{3}$ of 3971. facit $\frac{1}{3}$ 132 l 9 sh 4 d. then $\frac{1}{4}$ of that for 9 d. facit 33 l 11 sh 10 d. and then $\frac{1}{4}$ of that for 4 of the $\frac{5}{8}$ facit 8 l 5 sh 5. $\frac{1}{2}$ d. and $\frac{1}{4}$ of that for $\frac{1}{8}$ all being added and divided together, facit 41 l 9 sh 4. $\frac{21}{100}$ d.

(120.) If 3 L 2 $\frac{1}{7}$ oz cost 15 sh 3 d. how much shall 1 buy for 7 l and $\frac{3}{4}$ d.

15 . 3 . . 3 . 2 $\frac{1}{7}$ . . 7 . $\frac{3}{4}$

183 50 240

40 251 1680

7320 13445

336125

Facit 28 L 13 $\frac{15}{4603}$ 461

3374695

44647

71

First bring the first number into pence, facit 183. multiply this by 40 the product of the 2 denominators, facit 7320 for divider or denominator, then bring the middle number into the fraction, facit 251. being first brought into ounces, then bring the third number into pence by 240 facit 1680. then into the fraction, facit 13445 multiply this by 121. and divide that product by your divider, facit 28 L. 13. 15 oz. $\frac{15}{4603}$

(121.) If 1 qr. 7 oz. cost 17 $\frac{1}{6}$ sh. what cost 9 $\frac{1}{7}$ C.

1 . 7 . . 17 $\frac{1}{6}$ . . 9 $\frac{1}{7}$

455 107 29

4095 896

1365 25984

107

Facit 1 33 . 18 . 11 $\frac{71}{1365}$ 67811

2780288

323636

36871

43537

648

59

1

First I bring the quarters into ounces by multiplying it by 448 and adding the 7. facit 455. then I take $\frac{1}{3}$ of the denominator 6 and denominator 3 multiplied together facit 9 by this I multiply the first number, facit 4095 for divider, then I bring the middle number into the fraction facit 107. then I bring the third nũber into the fraction. facit 29. this I multiply by 896. to bring it into oz. being but 1 oz of a l. because I carried $\frac{1}{3}$ the middle nũber to the first, facit 25984. multiplied by 107. facit 2780288 divided by your divider 4095 facit 678 then I should multiply the remainder by 12 to bring it into d but because my divider may be divided by 3. I take $\frac{1}{3}$ of it, which is 1365 for divider, and do multiply the remainder by 1 part of 12 which is 4. facit 33 l 18 sh 11. 71 d. $\frac{71}{1365}$

(122.) If

(122.) If 1 C coſt 6 l 4 ſh. what coſt 1 qr. 9 L. 5 oz.

1 . . 6 . 4 . . 1 . 9 . 5

1 . 11 . —
— . 7 . 9
— . 1 . 1 . 3 . 5 . &c.
— . 1 . 1 . 3 . 5 . &c.
— . — . 3 . 3 . 10 . &c.
— . — . — . 9 . 11 . &c.

Facit 2 . 1 . 3 . 8 . 7 . &c.

Firſt conſider that if 1 C coſt 6 l 4 ſh the $\frac{1}{4}$ will coſt 1 $\frac{1}{7}$ of that price, which is 1 l 11 ſh. then for 7 l take the 1 of that, and for 1 l 1 of that laſt $\frac{1}{7}$ number, and as much more for the other pound, then for 4 oz. take the $\frac{1}{4}$ of the laſt number, and for 1 oz. the 1 of that added together.

(123.) If 1 C coſt 13 ſh 5 d. what coſt 71 C 13 L.

1 . . 13 . 5 . . 71 . 13

46 . 3 . —
1 . 3 . 8
— . 5 . 11
— . 6 . $8\frac{2}{2}$
— . — . $11\frac{1}{3}$
— . — . $5\frac{3}{7}$
— . — . 1_{12}^{7}

Facit 47 . 14 . 1_{12}^{11}

Firſt I multiply the 71 C by 13 as ſhalloweth, ſaying 13 times one is 13 ſet down 3 ſh and carry 1, and the next figure to your left hand is not even number, therefore I take away one and ſay, 13 times one is 13. and 1 in mind is 14. then I take 1 of the remainder 6 and ſay, 3 times 13 is 39 and 7 is 46 l. then for 5 ſh I take the 1 part of 71 l 13 ſh. and for 1 d the 1 of that, then for the 13 I conſider that 8 L is 1 of 1 C. and therefore I ſuppoſe 1 ſaying 1 of 13 ſh 5 d is 6 ſh 8. 1 d. which I ſtrike out with a ſmall line, that I may perceive it and worke upon it, firſt for 8 l 1 take 1 of it, and for 4 $\frac{2}{3}$ of it, and for 1 l the 1 of it added together, facit 47 l 14 ſh. 1. $\frac{11}{12}$ d.

(124.) If 1 C cost 15 sh $8\frac{3}{4}$ d. what cost $13\frac{5}{8}$ L.

1 . . 15 . $8\frac{3}{4}$ . . $13\frac{5}{8}$

7 . 10.4 . 6 . . 1

1 . 1 . 5 . 9 . 5 . &c.

First see what 1 C. doth come to, then take for $\frac{1}{8}$ of that, and for $\frac{3}{4}$ the $\frac{1}{3}$ of that, and for 1 l the $\frac{1}{4}$ of that, and for 48 the $\frac{1}{3}$ of the last number, and for 1 the $\frac{1}{3}$ of that, added together facit 1 sh 10 d 11–6–5.

. 6 . 8 . 10 . 8 . &c.

. 1 . 8 . 2 . 8 . &c.

. . 16 . 1 . 4 . &c.

. . 2 . 6 . 4 . &c.

Facit sh 1 . 10 . 11 . 6 . 5 . &c.

(125.) If 100 L cost 7 l 9 sh $4\frac{2}{3}$ d. what cost 987 L 13 oz.

100. . . 7 . 9 . $4\frac{2}{3}$ . . 987 . 13

First if 1 C cost 7 l 9 sh 4 $\frac{2}{3}$ d. and begin with 7 l and thinke if 1 C cost 7 l. 987 L 13 oz. will cost 98 $\frac{7}{10}$. 13 l. which is $16\frac{1}{2}$. then for 9 sh take first for 5 sh the $\frac{1}{2}$ and for 4 sh the $\frac{1}{5}$ and for 4 d take the $\frac{1}{12}$ of 197 l 11 sh 3 d and for the $\frac{1}{2}$ take 1 of the quotus of 4 d added together, and divide it by 100. facit 73 l 15 sh 8 9 d.

6914 . 13 . 9

246 . 19 . $\frac{3}{4}$

197 . 11 . 3

16 . 9 . $3\frac{1}{2}$

2 . 14 . $10\frac{11}{14}$

Facit 1 73 l 78 . 8 . $2\frac{11}{14}$
sh 15 68
d 8 18

(126.) If

(126.) If 100 L cost 16 l 17 sh 8½ d. what cost 11½ oz.

100 . . 16 . 17 . 8½ . . 11½

8 . 8 . 10 . 4
2 . 2 . 2 . 7
1 . 1 . 1 . 3 . 6
— . 10 . 6 . 7 . 9
— . 2 . 7 . 7 . 11 . &c.

12 . 5 . 4 . 6 . 2 . &c.

Facit { sh 2|45
d 5|44

first if 1 L cost 16 l 17 sh 8½ d. the 8 oz. will cost ½ of this, and the 2 of that, and the 1 of that, and 1 oz. the ½ of this, and for 4 the 1 of the last number, and for 1 the ¼ of that added together, and divided by 100, facit as sh d ¼ &c. periods.

(127.) If 100 L cost 7¾ d. what cost 1943 L. 2.

100 . . 7¾ . . 1943 . 7

48 . 11 . 6 . 1
12 . 2 . 10 . 6
2 . — . 5 . 9
— . — . 1 . 11 . 3
— . — . — . 11 . 7 . &c.
— . — . — . 5 . 9 . &c.

62 . 15 . 1 . 7 . 7 . &c.

Facit { sh 12|55
d 6|61

first cast up the 1943 d at 7¾ and afterwards the 7 oz. first for ¾ d take ½ and for ¼ d take ¼ of that, and for ½ take ½ of that, and for ¼ take ¼ of that, so you have for 7¾ next for 7 oz. take ¼ of 7¾ accounting 11 sh 7 d 9 mites, and for 2 oz. the ½ of that, and for 1 oz. the ¼ of that, adde 1 together and divided by 100 facit as sh 6 d &c.

(128) If

(128.) If 100 cost 3 l 8 sh 11 1/2 d. what cost 37 7/8

100 . . 3 . 8 . 11 1/2 . . 37 7/8

111 . — . —
14 . 16 . —
— . 9 . 3
1 . 4 . 8
— . 1 . 6 . 6
— . — . 4 . 7 . 6
— . 7 . 7 . 11 . 6
2 . 13 . 7 . 8 . 6

Facit l 1 | 30 . 13 . 1 . 9 . 6
sh 6 | 13
d 1 | 57

First cast up the 37 l at 3 l. facit 111 l. then at 8 sh saying 8 times 7 is 56. set downe 16 and carry 2 l. then take 1/2 of 8 saying 4 times 3 is 12. and 2 in mind facit 14. for 11. 5/8 do thus first for 8 d take 1 part of 37. and for 3 d 1 part if it had beene enough to yeeld a pound, but being but 37 take 1 of 37. because 37 threepences will not yeeld a pound therefore I take 1/2 of it, to see what sh. are in't, facit 9 sh 3 d. then next see what 8 l will cost, first take 1/9 of 38—11—5 facit 7 sh 7 d 11—6 multiply this by 7 facit 2 l 13 sh 7 d 8—6 added all together and divided by 100 facit 2 l 6 sh 1 d 8

(129) If 13 C 15 oz. cost 543 l. what cost 7 C 2 l

13 . 15 . . 543 . . 7 . 2

1792 — 1792

23311 — 12576
543

Facit 292 . 18 . 10 3154/23311

68287680
22665768
2895524
479122
23802
20956
2425
311

First multiply the first and last number by 1796. the ounces of a hundred, and adde in the odd ounces, then multiply the last number by the middle, and divide by the first, facit 292 l 18 sh. 10. 3154 d. 23311

(130.)

(130.) If 8 L $4\frac{1}{3}$ oz. cost 2 l 15 sh $9\frac{11}{13}$ d what cost 12 L $14\frac{7}{16}$ oz.

8 . $4\frac{1}{3}$ . . 2 . 15 . $9\frac{11}{13}$ . . 12 . $14\frac{7}{16}$

132	55	206
397	669	3303
208	8708	8708
82576		28762524
		1044
	87	86287572
Facit 14 . 7 . $\frac{1656}{5056}$		37122288
		408 2
		7

First bring the 8 l 4 1 oz into the $\frac{1}{3}$ fraction, facit 397. multiply it by 28 the product of 13 times 16. facit 82576 for divider, then bring the middle number into pence and into the fraction, facit 878. then bring the third number into ounces, and into the fraction, facit 833. multiply these two numbers together, and divide by the first, facit 14 sh 7 $\frac{1656}{5056}$

(131.) If 7 C 1 qr 2 L cost 14 l 7 sh 9 d. what cost 31 C 1 qr. 11 L.

7 . 1 . 2 . . 14 . 7 . 9 . . 31 . 1 . 11

814		125
Facit 162 . 1 . $\frac{581}{814}$		35 . 1 . — . —
50524 . 20 . 3		14044 — . —
267636		1170 6. 8
49215		175 . 11 . —
13191		14 . 12 . 7
38		
5		

First bring the 7 C 1 qr. 21 into pounds, facit 814. then the last number into pounds, facit 3511. then suppose 1 L cost 14 l 7 sh 9 d. then multiply the 3511 by 14. set it a place nearer to the right hand, and so you have for 14. then for 6 sh 8 d take $\frac{1}{3}$ of 3511. and for 1 sh the $\frac{1}{20}$ part of 3511. and for 1 d the $\frac{1}{240}$ part of the last, add all together, facit 5514 l. 2 sh 3 d. which divide by 814. facit 6 l. 11 sh 1. $\frac{581}{814}$ d.

(132.) If

(132.) If 3 yards at London be 4 elles at Antwerpe, how many yards at London be 84 elles at Antwerpe. Answer. Such reason as 4 elles hath to 84 elles, such reason must 3 yards have to the yards which be 84 elles at Antwerpe: by the fifteenth instruction of my first booke.

4 . . 3 . . 84
21

Facit 63

Take $\frac{1}{4}$ part away from 4 the first number, and then the first and middle number wilbe in the reason of equality, and therefore take the $\frac{1}{4}$ of the third number from it selfe, and the remainder is the facit. Or divide the third number by the first, and their reason is 21 times, therefore multiply the middle number by 21, and the product is the facit.

(133) If 4 elles at Antwerpe be 3 yards at London, how many elles at Antwerpe be 167 yards at London.

3 . . 4 . . 167
$55\frac{2}{3}$

Facit $222\frac{2}{3}$ elles.

Add the third part of 3 to it selfe, and then the first and second numbers are in the reason of equality, wherefore add 1 of 167 to it selfe, $\frac{1}{3}$ and their aggregate is their facit, or divide the last by the first, and multiply by the second number.

(134.) If 5 elles at Antwerpe be 3 elles at London, how many elles at Antwerpe be 103 elles at London.

3 . . 5 . . 103
515

Facit $171\frac{2}{3}$ elles.

Multiply the third number by the middle, and divide by the first number, or suppose 3 to be 6 and 5 to bee 10. then multiply the last by 10, which is by adding a cypher and the product divide by 6. and the facit is $171.\frac{2}{3}$

(135.) If 3 elles at London be 5 elles at Antwerpe, how many elles at London be $171\frac{2}{3}$ elles at Antwerpe.

5 . . 3 . . $171\frac{2}{3}$
515

Facit 103 elles.

Multiply the third number by the middle, and divide the first number, and the fraction is 103.

(136.)

(136.) If 8 braces be 5 yards, how many yards be 139 braces.

8 . . 5 . . 139
695

Facit $86\frac{7}{8}$ yards..

Multiply the last by the middle and divide by the first number, or divide the last by the first and multiply by the middle number, facit $86\frac{7}{8}$

(137.) If 5 yards be 8 braces, how many braces are 97 yards.

5 . . 8 . . 97
776

Facit $155\frac{1}{5}$ braces.

Multiply the middle by 5 the third, and divide by the first number, or suppose 5 to be 10 and 8 to be 16, then multiply 97 by 16. saying 7 times 16 is 112 and because you are to divide by 10 which is cutting off the last figure, and so count it for $\frac{2}{10}$ but abbreviate it, and set it downe 1 and carry 11. and so for working with the rest of the figures, the facit is $155.\frac{1}{5}$

(138.) If 67 L at London be 100 L at Venice, how many pound at London are 7894 L at Venice.

100 . . 67 . . 7894
67

Facit $5288\frac{49}{100}$ L. 5288|98

Multiply the last by the middle, and, divide by the first, and because my diviser is 100. therefore I cut off the two last figures, and these cut off, is numerator to the fraction, facit $5288.\frac{49}{100}$

(139.) If 25 L at Antwerpe be 26 at London, how many pound of Antwerpe are 112 at London.

26 . . 25 . . 112
56
$4\frac{4}{13}$

Facit $107.\frac{9}{13}$ L.

Divide 112 by 26. which is done by 2 and 13. and multiply the last quotus by 25. facit $107.\frac{3}{13}$

(140.) If

(140.) If 112 L at London be one centner at Noremberge, how many centners at Noremberge are 1784 L at London.

Divide the laſt by the firſt after the ordinary way, facit $15\frac{1}{14}$.

112 . . 1 . . 1784

Facit $15\frac{1}{14}$ centners.

66
10

(141.) If 80 palmes be 21 yards, how many palmes are 197 yards.

Multiply the laſt number by 8 adding a cypher at the right hand for the cypher of 80. then divide it by 3 and by 7 becauſe 3 times 7 is 21. facit $750\frac{10}{21}$

21 . . 80 . . 197

15760

$5253\frac{1}{3}$

Facit $750\frac{10}{21}$ palmes.

(142.) If 21 yards be 80 palmes, how many yards are 419 palmes.

Divide 419 by 80. which is done by 4 and by 20. for 4 times 20 is 80.

80 . . 21 . . 419

$104\frac{1}{4}$

$5\frac{10}{20}$

Facit $109\frac{70}{80}$ yards.

(143.) If one ounce of gold of 23 karratz fine be worth 3 l. what is one ounce worth of $17\frac{1}{4}$ kar: fine. Anſwer. The value of gold and ſilver is rated according to his fineneſſe: therefore ſuch reaſon as 23 kar: hath to $17\frac{1}{4}$ kar: ſuch reaſon muſt 3 l have to the price that gold of $17\frac{1}{4}$ kar: fine is worth.

£3 . . 3 . . 17½

Facit 12 . 5 . —

57.25

5

2

Consider that the gold is valued according to his finenesse, and therefore such reason as 23 hath to 17.½ such reason hath 3 to the fraction, which is 2—5. to work you

ll mukiply 17.½ by 3. saying 3 times 1 is 15 sh. then 3 times 7 is 21. placing 1 and carry 2.

en 3 times 1 is 3 and 2 is 5 facit 51 l. 15 sh. placing it under a double line, and divide by 23. cit 2 l 5 sh.

(144.) If one ounce of gold of 23 kar: fine be worth 3 l. what is one ounce of fine gold worth, when one oz. is 24 kar.

23 . . 3 . . 24

Facit 13 . 2 . 7

72608

3124

6

Mukiply the 24 by 3. and divide the produst by 23 facit 3. mukiply the remainder by 20. and divide the produst by 23. facit 2 sh then mukiply that remainder by 12 and divide the produst by 23. facit 7. 7 in example.

(145.) If one ounce of silver of 11 oz. 12 d fine cost 5 sh. what cost one ounce of fine silver.

11 . 12 . . 5 . . 12

232 *Facit* 5 sh 2 $\frac{2}{29}$ d.

29

60

2

Consider that 12 oz. is 8 d weight, mukiply 11 by 12. and there for 11 oz. 12 d of the 12 oz. I set downe 5 sh. then there remaines for 8 d weight, then I bring the first 11 oz. 1 d into penny

eights, facit 232. if 232 be worth 5 sh which is 60 d. what is 8 d weights, I mukiply 60 by the of 60. facit still 60. which I divide by 29 the 8 parts of 232. facit 2. 2 so the whole facit is

29

2. 2 d.

29

(146.) If

Pirſt caſt up the 53 oz. 8 d 16 gr. at 5 ſh. which is 13/20 and for 4 d take 1/3 of that if the 7/8 53 oz. 8 d 16 gr. had beene 9 oz. 11 d fine, therefore I ſay if 12 oz. be worth 14 l 4 ſh 2½ d. 8 l 9 ſh 7 d. what is 9 oz 11 d weight worth ? take firſt for 6 oz. of the 9 oz facit 7 l. 2 ſh. then for 3 oz. the 1/2 of that, and then for 16 d the 1/6 of that, and for 1 d the 1/16 of that, as in example you may perceive.

1 . . 5 . 4 . . 53 . 8 . 16

13 . 7 . 2

—. 17 . 2 . 8 . 9 . 7 . &c.

12 . . 14 . 4 . 11 . 8 . 9 . 7 . . 9 . 11

7 . 2 . 5 . 10 . 4 . 9

3 . 11 . 2 . 11 . 2 . 4

—. 11 . 10 . 5 . 10 . 4

—. 1 . 2 . 2 . 11 . 10

Facit l 11 . 6 . 9 . 6 . 5 . 3 . &c.

(148) If one ounce of fine gold be worth 3 l 3 ſh. and one oz. of fine ſilver 5 ſhillings 4 pence, what is an Ingot of gold worth weighing 50 ounces of 19 kar. in gold and three kar. in ſilver.

Here the third number of the firſt worke is 19 kar. but I account it 19 oz. and ſo I caſt it up, facit 59 l 17 ſh. and in the ſecond worke I account the 3 kar. to be 3 oz. and ſo caſt it up, facit 16. all added together, facit 60 l 13 ſh which is 24 times as much as it ſhould be, then for the third worke, I ſay if 24 kar. make ſo much, what doth 50 oz here to ballance the firſt worke, I account the 24 kar. to be 24 oz. which is 24 times ſo much as it is, as well as the 60 l 13 ſh. and ſo the laſt worke ſtands thus, if 24 oz. be worth 60 l 13 ſh. what 50 oz. Here I conſider that 5 is 2. 1/12 times 24 and therfore I ſet down 2. 1/12 times 60 l 13 ſh facit 126 l 7 ſh 1 d. as in example.

1 . . 3 . 3 . . 19

57 . — . —

2 . 17 . —

1 . . 5 . 4 . . 3 *Facit* — . . 16 . —

24 . . 60 . 13 . — . . 50

60 . 13 . —

5 . 1 . 1

Facit l 126 . 7 . 1

(149.)

(49.) If one yard of damaske cost 10 sh 8 d. what cost 4 peeces content yards.

$18\frac{1}{7}$. $19\frac{1}{3}$. $19\frac{1}{5}$. $19\frac{1}{4}$
$18\frac{1}{3}$. $19\frac{1}{7}$. $19\frac{1}{3}$. $19\frac{1}{3}$

1 . . 10 . 8 . . $76\frac{3}{4}$

38 . 7 . 6
2 . 11 . 2

Facit 1 40 . 18 . 8

First I add all the contents together of the 4 peeces, facit $76.\frac{3}{4}$ yard, then say, I imagin one cost 10 sh 8 d. what cost $76.\frac{3}{4}$ facit 40 l. 18 sh 8 d.

(150.) If one yard of sattin cost $12\frac{1}{3}$ sh. what cost three peeces content yards.

$19\frac{1}{4}$. $19\frac{1}{5}$. $19\frac{1}{8}$
$19\frac{1}{4}$. $19\frac{1}{3}$. $19\frac{1}{8}$

1 . . $12\frac{1}{3}$ . . $59\frac{5}{24}$

35 . 8 . 6
— . 19 . $8\frac{1}{8}$

Facit 1 36 . 8 . $2\frac{1}{8}$

Masterſons way followes, but I do it thus.

The price being $12\frac{1}{3}$ sh. I account it at 10 sh the yard, and then 59. $\frac{5}{24}$ l. would cost 59. $\frac{5}{24}$ l. then I consider the $\frac{1}{12}$ of a shilling, is 1 d. so then the 1 l must needs be 20 times as much, which is 20 d. so then the 59. $\frac{5}{24}$ yard at 20 sh the yard comes to 59 l 10 d. then for 10 sh take $\frac{1}{2}$ of it, and for 2 sh the $\frac{1}{7}$ of that, and for 4 d the $\frac{1}{6}$ of that, which added together, facit 36 l 8 sh $2.\frac{1}{6}$ d.

MASTERSONS Way.

First suppose the yard had cost 20 sh. the 59. $\frac{5}{24}$ would have cost 59. $\frac{5}{24}$ to know what that is, first I consider that $\frac{1}{12}$ sh is 1 d. then 1 l must needs be 20 times as much, so that if 1 yard had cost 1 l. then 59. $\frac{5}{24}$ would have cost 59 l 10 d. then I take the $\frac{1}{2}$ of it, for 10 sh the $\frac{1}{7}$ of that for 2 sh. and the $\frac{1}{6}$ of that for 1 sh.

(151.) If one yard of cloth coſt 7 ſh $9\frac{1}{4}$ d. what coſt 3 clothes content $31\frac{1}{3}$ yards the cloth one with another.

First I multiply the $31.1\frac{1}{3}$ by 3, facit 94.1 yard, then ſay, if one yard coſt 7 ſh $9\frac{3}{4}$ d. what coſt $94.1\frac{1}{3}$ yard, facit 36 l 8 ſh 3.3 d. firſt ſuppoſe it at 20 ſh. facit $94.1\frac{1}{3}$ then take the 1 the $\frac{1}{4}$ the $\frac{1}{3}$ of that, the $\frac{1}{10}$ of that, and the $\frac{1}{4}$ of that.

$31\frac{1}{3}$
3

1 : : 7 . $9\frac{1}{4}$: : $94\frac{1}{3}$

23 . 12 . 6
11 . 16 . 3
1 . 3 . $7\frac{1}{2}$
— . 5 . $10\frac{7}{8}$

Facit l 36 . 18 . $3\frac{1}{8}$

(152) If 3 ſowes of lead poiz 7 C 3 qr 9 L. 8 C 2 qr 12 L. and 8 C 3 qr 13 L. coſt 19 L 17 ſhillings, what coſt 1 L.

First ſet down the three ſummes and add the weight of them together, facit 25 C 1 qr 6 l. brought into pounds, facit 2834 for divider, then bring the ſecond number into pence for dividend, facit 4764.

7 . 3 . 9
8 . 2 . 12
8 . 3 . 13

25 . 1 . 6 : : 19 . 17 : : 1
101 397
28 *Facit* 1, $\frac{967}{4173}$ d.
2834 4764
1930

(153.)

(153.) If 1 C of lead coſt 12 ſh 9 d. what coſt two ſowes poiz 8 C 2 qr 14 L. 9 C 3 qr 25 L.

8 . 2 . 13
9 . 3 . 25

1 . . 12 . 9 . . 18 . 2 . 10

10 . 16 . —
— . 13 . 6
— . 6 . 4 . 6
— . — . 10 . 11 . 1 &c.
— . — . 2 . 8 . 9 &c.

Facit l 11 . 17 . — . 1 . 10 &c.

First add the two ſummes together, facit 18 C 2 qr 10 l then ſay, if 1 coſt 12 ſh what will 18. firſt multiply 3 by 12 facit 36. which is 16 ſh. and goe 4. and then 6 times 1 is 6 and 4 is 10. facit 10 l 16 ſh. then if 1 coſt 9 d. what will 18. facit 9 ſh. and for the third the 1 of that, added together, facit 13 ſh 6 d. for the $\frac{1}{2}$ C 6 ſh 4 d. then for 81 the $\frac{1}{4}$ of the laſt, and for 2 l. the $\frac{1}{8}$ of that.

(154.) If three packes and 7 clothes content 29½ yards the cloth one with another, coſt 284 l 17 ſh 8 d. what coſt one yard, reckoning 10 clothes for one packe.

3 . 7

37

29½

18½

1091½

1091½ . . 284 . 17 . 8 . . 1

2183 5697

Facit 5 ſh 2 $\frac{1398}{2183}$ d.

XX395.4
480 8
576
139

First multiply the 3 packs by 10. and add in 7. facit 37. muliply this by 29.1 firſt take the $\frac{1}{2}$ of 37. facit 18.$\frac{1}{2}$ then multiply that 37 by 29. and adde in the 18.$\frac{1}{2}$ facit 1091.1 for diviſor; place it in another place, for the firſt number & bring it into a fraction, facit 2183. then bring the middle number into ſhillings, facit 5697 ſh 8 d. this ſhould be multiplied by the denominator, ſaying 2 times 8 is 16. ſet downe 4 and carry 1 ſh. and ſo forth as in example.

An Introduction to the Queſtions of *Loſſe and Gaine.*

1. If the Queſtion be what is gain'd per Cento, then by Subſtraction ſee what is gained, and ſay, if ſo much that it coſt gaine ——. what ſhall 100. Then bring what doth gaine and what is gained under one name, and ſo worke.
   If what is loſt, by Subſtraction do the like, ſee what's loſt, bringing what loſeth and what is loſt under one name, and ſo working.

2. If the Queſtion be how it ſhould be ſold to gaine — per Cento, ſay, if 100 ſhould become 100 & —. what ſhould that it coſt become.
   If how to loſe — per Cento, ſay, if 100 ſhould become 100 ſaving —. ſubſtracting it from it, what ſhould that it coſt become?

3. If having gained — per Cento, to know what it coſt, ſay, if 100 — become 100. what ſhall that 'twas ſold for become.
   If having loſt — per Cento, to know what it coſt, ſay, if 100 ſaving — become 100. what ſhall that 'twas ſold for become.

4. If having gained ſo much — per Cento, the Queſtion be how much is gain'd when 'tis ſold for more, ſay, if that 'twas firſt ſold for make 100 become 100 & — what ſhall that you would now ſell it for make 100 become, viz. — .. 100 — . .
   If how much is loſt when 'tis ſold for leſſe, ſay, if that 'twas firſt ſold for make 100 become 100 ſaving — what ſhall that you would now ſell it for make 100 become, viz. — ..

QVESTIONS OF LOSSE AND GAINE without Time.

(1.)

IF a yard of bayes coſt 2 ſh. and it is ſold for 2 ſh 4 d the yard, the queſtion is how much is gained per cento. Anſwer. Bring that which doth gaine, and that which is gained under one name.

First conſider that if it coſt 2 ſh. and is ſold for 2 ſh 4 d there is 4 d gained, then ſay, if 2 ſh gaine 4 d. what doth 100. facit 16. 2/3

2 . 4
2 . —

2 . — . 4 . . 100

Facit 16⅔ per cento

(2.) If a yard of velvet coſt 18 ſh. and it is ſold for 17 ſh 6 d the yard, how much is the loſſe per cento. Anſwer. Bring that which doth loſe and that which is loſt under one name.

First conſider it coſt 18 ſh. and was ſold for 17 ſh 6 d. there is 6 d loſt, then ſay if 18 ſh loſe 6 d. what doth 100 l facit 2 l. this is done by conſidering that 6 d is 1/36 of 18 ſh. and therefore the facit muſt be the 1 of 100 l. to divide by 36. divide firſt by 2. and then by 18.

18 . —
17 . 6

18 . . — . 6 . . 100
50

Facit 2 7/9 per cento.

An Introduction to the Queſtions of *Loſſe and Gaine.*

1 If the Queſtion be what is gain'd per Cento, then by Subſtraction ſee what is gained, a[illegible] if ſo much that it coſt gaine ——. what ſhall 100. and what is gained under one
If what is loſt, by Subſtraction bringing what loſeth and wh ſo working.

2 If the Queſtion be how it ſhou to, ſay, if 100 ſhould becom it coſt become.
If how to loſe — per Cento, ſ ſaving —. ſubſtracting it fr become?

3 If having gained — per Cen 100 — become 100. what ſhall that 'twas
If having loſt — per Cento, to know what it coſt, ſay, if 100 ſaving — become 100. what ſhall that 'twas ſold for become.

4 If having gained ſo much — per Cento, the Queſtion be how much is gain'd when 'tis ſold for more, ſay, if that 'twas firſt ſold for make 100 become 100 & — what ſhall that you would now ſell it for make 100 become, viz. — .. 100 — . .
If how much is loſt when 'tis ſold for leſſe, ſay, if that 'twas firſt ſold for make 100 become 100 ſaving — what ſhall that you would now ſell it for make 100 become, viz. — ..

CROF
PAGE

QVESTIONS OF LOSSE AND GAINE without Time.

OPPED GES.

and it is he questi- per cen- t which is gained

First consider that if it cost 2 sh. and is sold for 2 sh 4 d there is 4 d gained, then say, if 2 sh gaine 4 d. what doth 100. facit 16. 2/3

to

(2.) If a yard of velvet cost 18 sh. and it is sold for 17 sh 6 d the yard, how much is the losse per cento. Answer. Bring that which doth losse and that which is lost under one name.

First consider it cost 18 sh. and was sold for 17 sh 6 d. there is 6 d lost, then say if 18 sh losse 6 d. what doth 100 l. facit 2 1/2 l. this is done by considering that 6 d is 1/36 of 18 sh. and therefore the facit must be the 1/36 of 100 l. to divide by 36. divide first by 2. and then by 18.

18 . —
17 . 6

18 . . — . 6 . . 100
50

Facit 2 7/9 per cento.

(3.) If

(3.) If one yard of cloth cost 8 sh. for how much must it be sold to gaine 5 per cento.

100 . . 5 . . 8

$---.4\frac{4}{7}$

Facit for 8 sh $4\frac{4}{7}$ d.

First say, if 100 gaine 5 l. what shall 8 sh gaine. First considering that 5 l is $\frac{1}{20}$ of 100. and therefore the facit must be $\frac{1}{20}$ of 8 sh.

(4.) If one ell of canvas be sold for 5 sh. I gaine 8 per cento, the question is how much I shall gaine per cento, when the ell is sold for 5 sh 2 d.

5 . . 108 . . 5 . 2

$3\frac{3}{7}$

Facit $11\frac{3}{7}$ per cento.

First consider if 5 sh make 108 l. then 5 sh 2 d doth gaine 108. and $\frac{1}{20}$ part of 108. because that 2 d is the $\frac{1}{20}$ part of 5 sh as in example.

(5.) If one yard of cloth cost 7 shillings 6 pence, for how much must it be sold to lose 6 per cento.

100

6

100 . . 94 . . 7 . 6

$9\frac{2}{7}$ 90

$84\frac{5}{7}$

Facit at 7 sh $\frac{5}{7}$ d.

First I substract the losse from the hundred pounds, remaines 94. then I say, if 100 come 90 94 what doth 7 sh 6 d. which is 90 d. I take away the cypher of 100 and 90. remaines 10 and 9. then I consider that 10 is multiplied, then 9 by $\frac{1}{10}$ and therefore 94 is multiplied, then the facit being $\frac{1}{10}$ which being substracted from it the facit remaineth.

(6.) If a hundreth of Brasill be sold for 12 shillings, I lose 7 per cento, the question is how much the hundreth cost.

93 . . 100 . . 12

31 *Facit* 12 sh 10 $\frac{16}{31}$ d.

4000
98
23
32

First I say if 93 l come of 100 l. of what came 12 sh. facit 12 sh 10.16 d.

First take $\frac{1}{3}$ of 93. facit 31. then I take $\frac{1}{3}$ of 12 sh. that is 4. by which I multiply the middle number by 100. facit 400. which I place under the quotient line and divide it by 31.

(7.) If a kersey content 17 yards be sold for 6 sh the yard, I gaine 10 per cento, the question is how much the whole kersey cost.

1 . . 6 . . 17
110 . . 100 . . ---
51

Facit 14 . 12 . 8 $\frac{8}{11}$

First cut off the 100 one cypher, and one of the 110 then account the 6 sh to be 3 l. $\frac{1}{10}$ then I should bring the denominators to the di-

vider, instead whereof I divide one of the dividents by 10. which is done by cutting off another cypher from 100. then remaines 3 l 1 sh 10 d. 17 I divide for divident, 1 and 11 for divider, and then multiply and divide, as in example.

(8.) If one yard of cloth be sold for 11 sh. I lose 10 per cento, how much shall I win or lose when 4 yards are sold for 42 sh.

1 . . 11 . . 4 *Facit* 44
44 . . 90 . . 42

Facit 14 $\frac{1}{11}$ per cento per an: he doth lose

First consider that if I sell my 4 yards for 44. I lose 10 d per cento, and if I sell the 4 yards for 42 sh I lose more, and therefore I set downe 44 sh. and the 90 I and the 42 sh then I consider that in selling them for 42 sh I lose 2 which is $\frac{2}{44}$ or $\frac{1}{22}$ part, and therefore I must likewise lose the $\frac{1}{22}$ of 90 which is 4. and $\frac{1}{11}$ added to the 10 before, facit 14. $\frac{1}{11}$ per cento, or worke this as followeth. First say if 90 come of 100, whereof comes 44. Facit 48.8 then seeing I sell it for 42, I lose 6.8 $\frac{8}{9}$ what will 100, facit 14. $\frac{1}{11}$ thus may you do any such Question.

(9.) If a peece of moccado content 12 yards cost 21 sh. and 1 yard is sold for 1 sh 10 d. the question is whether I win or lose, and how much per cento.

1 . . 1 . 10 . . 12 *Facit* 22 sh,
21 . . 1 . . 100

Facit he doth gaine 4 $\frac{16}{21}$ per cento.

If 12 cost 21. & is sold for 1 sh 10 d. facit he gaineth 1 in 21. as for example, if 1 yeeld 22. 22 will yeeld 23 sh. so that if it cost 21 and is sold for 22. 21 doth gaine 1. what then doth 100 facit 4. 16 $\frac{16}{21}$

(10.) If 45 yards of velvet cost 30 pound, for how much must one yard be sold to gaine 9 per cento.

45 . . 30 . . 1
100 . . 109 . . —

150 218
5 72.8

Facit at 14 sh 6$\frac{2}{5}$ d.

First cut off the cypher from 100. and another from 30. then $\frac{1}{2}$ of 45 is 25. and $\frac{1}{2}$ of 3 is 1. multiplied by 10 facit 150 for divider, then I should multiply 109 by 20 to bring it into shillings: instead thereof I multiply it by 2 and my divider I divide by 10. then I take $\frac{1}{2}$ of my divider, facit 5 and 1 of 218 facit 72 sh 8 d. which divide by 5 facit 14 sh 6.2 d.

(11.) If a peece of striped canvas co
yards be sold for 2 shillings a yard, I l
cento, the question is how much the w
cost.

1 . . 2 . . 14
88 . . 100 . . —

22 700
350

Facit 31 sh 9$\frac{7}{11}$ d.

First take the $\frac{1}{2}$ of 88. facit 22 for divider, then multiply 2 and 14 together, facit 28. take $\frac{1}{2}$ of that, facit 7 multiplied by 100 facit 700 for divident, which divide by 2 and 11. because 2 times 11 is 22. as in example.

(12.) If one hundred weight of Brasill cost 12 shillings, how many pound must I sell for 145 pound to lose 15 per cento.

12 . . 112 . . 145
85 . . 100 . . ---

17 28 580

51 *Facit* 31843$\frac{7}{17}$ pounds.

1624000
93267
428

First take $\frac{1}{4}$ of 85. facit 17. and $\frac{1}{2}$ of 145 facit 29. then $\frac{1}{2}$ of 12 is 3. and $\frac{1}{2}$ of 112 is 28 the 29 being pounds, must bee brought into sh by 20 to make it like the first. facit 580 multiplied by 28 facit 16240 then by 100 which is done by prefixing two cyphers. facit 1624000 then for divident multiply the 17 by 3 the one fourth part of 12. facit 51 for divider.

(13.) I

(13.) If a peece of grogram contein 16½ yards coſt 4 l 10 ſh. and one yard is ſold for 4 ſh 10 d the queſtion is whether I win or loſe, and how much per cento.

1 . . 4 . 10 . . 16½

4 . 2 . 6
— 2 . 9

3 . 19 . 9
4 . 10 . —

. 10 . . — . 10 . 3 . . 100

1 1/32

e doth loſe 11 7/8 per cento.

9 is leſſe than 10 by the 1 of 9 and therefore 10 ſh 3 d is leſſe

ſh 3 d. which is 1. 5 ſh. added to the 10 ſh 3 d facit 11. 7

L of allume bee ſold for 27

5 per cento, the queſtion is how

ired weight coſt.

1546 . . 27 . . 112
115 . . 100 . . —

23190 *Facit* l 1 . 14 . 1 176/1771

177790

3024008
224614
249276
7143
31
7

cypher of 100 the cypher of the divider doth ballance it, then divide by the divider.

(15.) If a bale of madder weighing 8 C 20 L coſt 16 l 13 ſh 4 d. for how much muſt the hundred weight be ſold to loſe 4 per cento.

8

(10.) If 45 yards of velvet cost 30 pound, for how much must one yard be sold to gaine 9 per cento.

45 . . 30 . . 1
100 . . 109 . . —

150 218
5 72.8

Facit at 14 sh 6 d.

First cut off the cypher from 100. and another from 30. then 1 of 45 is 15. and 1 of 3 is 1. multiplied by 10 facit 150 for divider, then I should multiply 109 by 20 to bring it into shillings: instead thereof I multiply it by 2 and my divider I divide by 10. then I take 1 of my divider, facit 5 and 1 of 218 sh. facit 72 sh 8 d. which divide by 5 facit 14 sh 6 2 d.

(11.) If a peece of striped canvas content 14 yards be sold for 2 shillings a yard, I lose 12 per cento, the question is how much the whole peece cost.

1 . . 2 . . 14
88 . . 100 . . —

22 700
350

Facit 31 sh 9 d.

First take the 1 of 88. facit 22 for divider, then multiply 2 and 14 together, facit 28. take 1 of that, facit 7 multiplied by 100 facit 700 for divident, which divide by 2 and 11. because 2 times 11 is 22. as in example.

(12.) If one hundred weight of Brasill cost 12 shillings, how many pound must I sell for 145 pound to lose 15 per cento.

12 . . 112 . . 145
85 . . 100 . . ----

17 28 580

51 *Facit* 31 843 pounds.

1624000
93267
421

First take 1 of 85. facit 17. and 1 of 145 facit 29. then 1 of 12 is 3. and 1 of 112 is 28 the 29 being pounds, must bee brought into sh by 20 to make it like the first. facit 580 multiplied by 28 facit 16240 then by 100 which is done by prefixing two cyphers. facit 16240 ther for divident multiply the 17 by 3 the one fourth part of 12. facit 51 for divider.

(13.) I

(13.) If a peece of grogram contein $16\frac{1}{2}$ yards coſt 4 l 10 ſh. and one yard is ſold for 4 ſh 10 d the queſtion is whether I win or loſe, and how much per cento.

1 . . 4 . 10 . . $16\frac{1}{2}$

4 . 2 . 6
— 2 . 9

3 . 19 . 9
4 . 10 . —

4 . 10 . . — . 10 . 3 . . 100
90 $1\frac{7}{32}$

Facit he doth loſe $11\frac{7}{32}$ per cento.

from 100. then conſider that 9 is leſſe than 10 by the 1 of 9 and therefore 10 ſh 3 d is leſſe than the facit by the 1 of 10 ſh 3 d. which is 1. 5 ſh. added to the 10 ſh 3 d facit 11. 7

at 5 ſh. and becauſe it is but 3 ſh 10 d. ſubſtract of that quota of 5 ſh. from 4 l 2 ſh 6 d. remaines 3 l 19 ſh 9 d. and ſo much he makes of 28. 1 yard at 3 ſh 10 d. and it coſt him 4 l 10 ſh. ſo that he loſeth 10 ſh 3 d. then ſay, if 4 l and 10 ſh loſe 20 ſh 3 d. what doth 100. to work it, firſt bring 4 l 10 ſh into ſhillings, facit 90. then caſt of the cypher from 90. and another

(14.) If 1546 L of allume bee ſold for 27 pound, I gaine 15 per cento, the queſtion is how much the hundred weight coſt.

1546 . . 27 . . 112
115 . . 100 . . —

23190 *Facit* 1 . 14 . 1 $\frac{17}{177}$

177790

3024008
224614
249226
7143
31
7

First multiply the 1546 l by 115 as followeth, viz ſaying, how 15 times lying in 90. &c. Firſt by 15 facit 23190. then after by 1 ſaying once 9 is 1. and then the upper numbers facit 7. and the once 4 & 3 is 7 d. then multiply 113 by 29. facit 3024. hitherto preſixe 1 cypher, for it is to bee multiplied by 100. and the other cypher of 100 the cypher of the divider doth ballance it, then divide by the divider.

(15.) If a bale of madder weighing 8 C 20 L coſt 16 l 13 ſh 4 d. for how much muſt the hundred weight be ſold to loſe 4 per cento.

First multiply 8 C 20 L by 112. facit 916 then bring the 16 l 13 sh 4 d. facit 50. then divide 100 by 50. the quotus is 2. then the 916 should be multiplied by this 2 and the denominator 3 viz. by 6 but instead thereof I divide by 6. facit 16. then multiply 112 by 16 facit 1792 for dividend, after by 20 and 12. and divide still by your old divider, facit 1 l 19 sh 1. 11/12 d. 225

8 . 20 . . 16 . 13 . 4 . . 112

112 50

916

100 . . 96 . .

16 *Facit* 1 l. 19. 1 11/12

1792
287666
7529
8367
21
3
4

First if 100 fall to 95. 12 must fall to 11.2 if one be sold for 12 d. what are 4 yards sold for? facit 4 sh. then take 4 sh which is the middle hee hath received for 4 yards, and substract it from the money it must be sold for to lose 5 per cento, which is 11.2 remaines 7.2 sh. then say if 9 yards unsold must be sold for 7.2 sh what must one? this question consisteth of the last worke, which is thus wrought. Consider that your 2 sh is 4 4 d. then multiply 7 by 12. facit 84. and 4. 4 facit 88. 4 divide by 9. facit 9. and 7 remaines, then 7 times 5 is 35. and 4 is 39 for numerator, and 9 times 5 is 45 for denominator.

(16.) A merchant hath a peece of fustian content 13 yards, cost 12 shillings, whereof he hath sold 4 yards at 12 pence the yard, the question is at what price he must sell the yard of the rest, to lose in the whole peece after 5 per cento.

100 . . 95 . . 12 *Facit* 11 2/5

1 . . 12 . . 4 *Facit* 4 shillings.

9 . . 7 2/5 . . 1

Facit at 9 4/9 pence the yard.

(17.) A

(17.) A merchant hath 1800 L of ſugar, wherof if he ſell 1200 L at 14 pence the pound, and the reſt at 13 pence the pound, he gaineth 15 per cento, the queſtion is what all the ſugar coſt him.

1 . . 14 . . 1200 *Facit* 16800 pence.
1 . . 13 . . 600 *Facit* 7800 pence.

115 . . 100 . . 24600

23 21391
1782.7

Facit 189.2.7 7/23 492000
39237
2

Firſt caſt up 1200 at 14 d. and 600 at 13 d. facit together they make 24600 d then ſay if 115 come of 100 whereof came 24600 thus wrought Firſt take 23 of 115, facit 23. and 1 of 100 in the middle, facit 20. with which 20 I multiply 24600. facit 492000 for divident, divide by 23 facit 21391 d.

(18.) A merchant hath 800 L of ſugar coſt 16 pence the pound, yet 300 L coſt eleven pence the pound, the queſtion is for how much he muſt ſell the pound one with another to gaine 6 per cento.

1 . . 16 . . 800 *Facit* 12800
1 . . 11 . . 300 *Facit* 3300

11 . . 161 . . 1
100 . . 106 . . ---

This queſtion is eaſily underſtood, and thus wrought. 11 and 100 ſay 111 for divider, then multiply 161 by 106 for 1766 for divident, remaines 556 then 556/1100 halfe the fraction

Facit at 15 233/550 d the pound.

17066
65

(19.) A merchant hath one cloth content 41 yards, coſt 18 ſh the yard, another cloth content 28 yards, coſt 8 ſh the yard, and he doth ſell them one with another for 13 ſh 6 d the yard, the queſtion is whether he doth win or loſe, and how much per cento.

First cast up what both sorts of clothes cost, facit 962 sh. then cast what hee made of them, facit 931. $\frac{1}{2}$ sh. which I substract from the price they cost me, remaines 30 $\frac{1}{2}$ then I say if 962 sh. which is the price I paid for them, lose 30 1 what shall 100. facit 3. $\frac{81}{41}$ d. thus wrought, the first worke is easie, the next worke say 69 sixpences is 34. $\frac{1}{2}$ sh. which place under the 69. then multiply 13 by 69. and add in 34. $\frac{1}{2}$ facit 931. $\frac{1}{2}$ then for the latter worke consider that 100 halfes is 50. and 100 times 30 is 3050. and 50 makes 3050 for divider.

1 . . 18 . . 41 *Facit* 738
1 . . 8 . . 28 *Facit* 225

962 . . 30 $\frac{1}{2}$ . . 100

1 . . 13. 6. 69 *Facit* 931 $\frac{1}{2}$ . . 3

34 $\frac{1}{2}$ 3050

Facit he doth lose 3 $\frac{23}{41}$ per cento. 164

First the 2 ballance each other, then 4 times 6 is 24 for divident, and 100 for divider, abbreviated facit 6 added to 4 facit 4. 6 for the 6 is the gain.

(20.) If a pound of cinamon cost 4 sh ready mony, for how much must it be sold for 6 moneths to gaine 12 per cento per anno, without reckoning gaine upon gaine.

12 . . 12 . . 6
100 . . --- . . 4

Facit at 4 $\frac{6}{17}$ sh.

First take the $\frac{1}{2}$ of 18 is 9. and $\frac{1}{2}$ of 2 is 1. then 4 times 9 is 36. then 12 is 363. 12 is 12. 1 remaines 100 for divident, and 3 for divider.

(21.) If one ell of linnen cloth cost 18 d ready money, and it is sold for 20 d the ell for 4 moneths, the question is how much is gained per cento per anno without gaine upon gaine.

20
18

18 . . 2 . . 100
4 . . --- . . 12

Facit 33 $\frac{1}{3}$

(22.) If one ell of taffeta cost 4 sh 6 d ready money, and it is sold at 4 sh the ell for 8 moneths, the question is how much is lost per cento per anno without losse of losse.

4

4 . 6
4 . —

4 . 6 . . — . 6 . . 100
8 . . — . . 12

Facit $16\frac{1}{7}$

First reckon the 4 th 6 to be 9 and the ſixpence, then 4 and then 1 of 28 is 6. 1 of 3 is 2. remaines 6 for divider, and 100 for divident.

(23.) If one yard of velvet coſt 20 ſhillings ready money, for how long time muſt it be ſold at 19 ſhillings to loſe 15 per cento per anno, without gaine of gaine.

20
19 !

20 . . 1 . . 100
15 . . 12 . . —
3 *Facit* for 4 moneths.

First the 1 20 is $\frac{1}{20}$. then 1 of 100 is $\frac{5}{20}$. then 5 in 15 3 times, and 5 in 5 once, ſo there remaines 3 for divider and 12 for divident.

(24.) If one ell of linnen cloth coſt 28 pence ready money, for how long time muſt it be ſold at 29 pence the ell, to gaine 14 per cento per anno, without gaine upon gaine.

29
28

28 . . 1 . . 100
14 . . 12 . . —

49 150
$21\frac{1}{7}$

Facit at $3\frac{1}{4}$, moneths.

First 4 in 28 7 times, 4 in 12. 3 times, then the $\frac{1}{2}$ of 14 is 7. then $\frac{1}{2}$ of 100 is 50. remaines 7 times 9 for divider, and 3 times 50 for divident.

(25.) A merchant doth buy cloth at 8 ſhillings the yard for five moneths, and he doth ſell it againe for 7 ſhillings 6 pence the yard ready money, how much

much doth he loſe per cento per anno without loſſe upon loſſe.

First 8 times 5 is 40 for divider, and 6 d I doe account $\frac{1}{5}$ ſh. then I multiply 12 by 1 facit 6. then by 100. facit 600 for divident.

8 . —
7 . 6

8 . . — 6 . . 100
5 . . — . . 12

40 600 *Facit* 15 per cent. per an.

(26.) A merchant doth buy kerſeys at 4 ſh the yard for 7 moneths, and doth ſell them againe at 4 ſh 6 d the yard ready money, the queſtion is how much he doth gaine per cento per anno without gaine upon gaine.

First multiply the 4 and 7 together, facit 28 for divider, then 6 is the $\frac{1}{2}$ ſh. then multiply 12 by 1 facit 6. then 100 facit 600 for divident.

4 . 6
4 . —

4 . . — . 6 . . 100
7 . . — . . 12

600
150

Facit $21\frac{3}{7}$ per cent. per an.

(27.) If a pound of pepper coſt 34 pence ready money, at how muſt it be ſold for $4\frac{1}{2}$ moneths, to loſe 10 per cento per anno without loſſe upon loſſe.

First the $\frac{1}{10}$ of 10 is 1, and the $\frac{1}{10}$ of 100 is 10, then 10 times 12 is 120 for divider, then 34 ſhall be multiplied by 4. and the $\frac{1}{2}$ for divident, firſt I foreſee that $\frac{1}{2}$ of 34 is 17 which I keepe in mind, then I multiply 34 by 4. and add in the 17. facit 153 for divident, then 120 is 150 once, remaines 30 which is $\frac{1}{4}$ of 120 which being ſubſtracted from 34. facit $35.\frac{2}{3}$

12 . . 10 . . $4\frac{1}{2}$
100 . . — . . 34

153
$1\frac{1}{4}$

Facit at $32\frac{29}{40}$ d. the pound.

(28.) A

(28) A merchant doth buy velvet at 16 ſh the yard for 8 moneths, at what price muſt he ſell it againe for ready money to gaine 14 per cento per anno without gaine upon gaine.

12 . . 14 . . 8
100 . . — . . 16

75 112

Facit at $17\frac{17}{75}$ ſh the yard.

First 4 in 12. 3 times, 4 in 16. 4 times, then 4 in that 4 once, and 4 in 100 25 times, then 3 times 25 is 75 for divider, and 3 times 14 is 112 for dividend, as in example.

(29) A merchant doth buy ſaffron at 19 ſh the pound for 3 moneths, at what price muſt he ſell it againe for ready money, to loſe 8 per cento per anno without loſſe upon loſſe.

12 . . . 8 . . . 3
100 . . — . . 19

19

50

Facit at $18\frac{1}{50}$ ſh the pound.

(30.) A merchant doth ſell cinamon at 5 ſh the pound ready money, the queſtion is how long time he muſt demaund when he doth buy the ſame cinamon at 4 ſh 8 d the pound to gaine 10 per cento per anno without gaine of gaines.

5 . —
4 . 8

4 . 8 . . — . 4 . . 100
10 . . 12 . . —

14 120

Facit $8\frac{4}{7}$ moneths.

First I conſider that 4 ſh 8 d doth gaine 4 d. wherefore I ſay, if 4 ſh 8 d gaine 4 d what ſhall 100. then if 10 be gotten in 12 moneths, in how long time is the unknowne money got, facit $8\frac{4}{7}$ moneths, firſt cut off the cyphers of 10 and 100 then I bring the 4 ſh 8 d into fourepences, facit 14 for divider, then I accounte the 4 d one grote, and 10 and 12 for divident, as in example.

(31.) A

(31.) A merchant doth ſell chamlets at 3 pound the peece ready money, the queſtion is, how long time he had in the buying of the ſame chamlets at 3 l 8 ſh the peece, when he doth loſe 5 per cento per anno, without reckoning loſſe upon loſſe.

First I bring 3 l 8 ſh into 4 ſh peeces, facit 17 for divider, and do account the 8 ſh to be $\frac{2}{7}$, then 1 of 5 is $\frac{1}{7}$, and 1 of 100 is $\frac{1}{7}$ 20. then 3 times 20 is 40. then 12 times 4 is 480 for divident, as in example.

3 . 8
3 . ---

3 : 8 . . --- . 8 . . 100
5 . . ----- . . 12

17 *Facit* 28 $\frac{4}{17}$ moneths.

480
144

This queſtion hath but one rule of 3 in it, viz. if 100 become 112. what 4. firſt take the 1 of 104. facit $\frac{1}{26}$ for divider, then take the 1 of 4. facit $\frac{1}{1}$. then divide the divident 100 by 26 and multiply the remainder by 12. as in example.

(32.) If one ell of tapiſtrie be ſold at 4 ſh for 4 moneths, I gaine 12 per cento per anno, the queſtion is how much the ell coſt ready money, without reckoning gaine upon gaine.

12 . . 12 . . 4
104 . . 100 . . 4

26 *Facit* 3 ſh 10 $\frac{10}{13}$ d.

224
6

This queſtion conſiſteth of one rule of 3. Firſt bring the number into a fraction, facit 195. then caſt the depominator into 2 to open the 3 number, & ſuppoſe you doe ſee 30. then ſay the $\frac{1}{7}$ of 195 is 39. and 1 $\frac{1}{7}$ of 100 is 20. multiply the 40 in mind by 20. facit 800. which divide by 39. facit 20.

(33.) If a peece of moccado be ſold at 20 ſh for 5 moneths, I loſe 6 per cento per anno, the queſtion is, how much the peece coſt ready money, without reckoning gaine of gaines.

12 . . 6 . . 5 *Facit* 2 $\frac{1}{2}$
97 $\frac{1}{2}$ . . 100 . . 20

195 *Facit* 20 ſh 6 $\frac{3}{13}$ d.

39 8000
246

all multiplied by 12 and divided by 39. facit 6. 2 d. $\frac{2}{7}$

(34.) If a peece of sattin content 24 yards cost 9 pound, for how much must one yard be sold for 8 moneths to gaine 6 per cento per anno, without reckoning gaine upon gaine.

12 . . 6 . . 8 *Facit* 4
24 . . 9 . . 1
100 . . 104 . .—

120 936

Facit at 7 sh 9$\frac{3}{5}$ pence the yard.

First consider that this question consists of 2 later rules of 3. therefore say, if 24 yards cost 9 l. what cost 1. then if 100 rise to 104, what must the facit of the last working arise to. First multiply the 104 by 9 facit 936 for dividend, then I should multiply this by 20 to bring it into shillings, but instead thereof I divide 100 by 20. facit 5. then 5 times 24 is 120 for the divider. then divide 936 by 120. facit 7 sh remaines 96, which according to the ordinary course should be multiplied by 12 to bring it into pence, but to shorten the worke, I divide the divider by 12. facit 10. then I divide the 96 by 10. facit 9 $\frac{3}{5}$ d.

(35.) If 23 yards of bayes cost 46 shillings, and the yard is sold for two shillings foure pence for two moneths, the question is whether he doth win or lose, and how much per cento per anno, without reckoning gaine upon gaine.

1 . . 2.4 . . 23
46 . . 7$\frac{2}{5}$ . . 100
2 . . —— . . 12

46

Facit he doth gaine cento per cento per anno.

First say if 1 yard bee sold for 2 sh 4 d. what are 23 yards sold for? facit for 23 yards more than they cost, which is 7 $\frac{2}{5}$ sh. then say if 46 sh gaine 7.2 sh. what shall 100 gaine? then if 2 gaine the facit of the last working, what shall 12 moneths gaine? To worke this, first say 1 of 2 is 1 and 1 of 12 is 6. Or thus, 2 in 12 6 times. Or worke upon the two later rules of 3 for the first is done; for it shewes hee gained 7.2 by 46 sh then I should call the denominator 3 upon the divider, but instead thereof I divide the 6 by it which comes of 12. then reduce the middle number into the fraction, facit 23. multiplied by 2 which comes of the 12 facit 46. and then the question stands thus, if 46 gaine 46 what shall 100. facit 100. as in the example.

(36. If 14 yards of cotten cost 19 shillings, and one yard is sold for 16 d for 2 moneths, the question is whether he do win or lose, and how much per cento per anno, without reckoning gaine upon gaine.

First consider that if one yard be sold for 16 d. 14 are sold for 18.2 sh. which cost 19 sh. so that 19 sh loses 1 sh. what doth the 100 lose. Then if two moneths lose that, what doth 12 moneths lose? To work this, first take the 1 of 2. facit 1. and 1 of 12 facit 6. then multiply 6 by 1 facit 2. then multiply 100 by 2. facit 200, which divide by 19. facit 10.10 l.

1 . . 16 . . 14 *Facit* 18 2/3 shillings.
19 . . 1/3 . . 100
2 . . — . . 12

200

Facit he doth lose 11 10/19 per cento per anno.

(37.) If a peece of grogram content 14 yards be sold for five shillings the yard for 7 moneths, I gaine 6 per cento per anno, the question is how much the whole peece cost ready money, without reckoning gaine upon gaine.

First if 12 moneths gaine 6. what doth 7 moneths? facit 3.1 then if 103.1 come of 100. whereof comes 5. then if one yard cost that, what did 14 yards? To work this, bring 103.1 into the fraction, facit 207 for divider, then cast 2 the denominator to 5. facit 10 then multiply 14 by 10. which is done by prefixing a cypher and two more for 100, facit 1400 for divider.

12 . . 6 . . 7 *Facit* 3 1/2
103 1/2 . . 100 . . 5.
1 . . — . . 14

207 | 67.7

1400 | 2
1383 | 3
17 | 7
5 | 2
1 |

Facit 13.7.7 41/69

(38.) If

(38.) If a bale of fuſtians content 45 peeces coſt 39 pound ready money, for how much muſt the peece be ſold for nine moneths to loſe 12 per cento per anno, without reckoning gaine upon gaine.

12 . . 12 . . 9 *Facit* 9.
100 . . 91 . . 39
45 . . — . . 1

225 *Facit* at 15 ſh $9\frac{7}{15}$ pence.

35498
22943
278
206

First ſay if twelve moneths loſe 12, what doth 9 moneths for 9 moneths then ſay if 100 fals to 91, what ſhall 45 bee ſold for, the what ſhall 1 be ſold for? To worke this, firſt conſider that 39 ſhould bee multiplied by 20 to bring it into ſhillings, but inſtead thereof I divide 100 by 20. facit 5. then 5 times 45 is 225 for divider, then multiply 39 and 91 together, facit 3549 for divident, as in example.

(39.) If 7800 L of copperas be ſold for 381 at 4 moneths, I gaine 9 per cento per anno, the queſtion is how much the hundred weight coſt ready money, without reckoning gaine upon gaine.

12 . . 9 . . 4 *Facit* 3
7800 . . 38 . . 112
103 . . 100 . . —

8034 *Facit* 10 ſh $7\frac{217}{4017}$ pence.

425600
28391
68
56

This queſtion conſiſteth of the two latter rules of 3. and they are thus wrought. Firſt cut off the 2 cyphers of the 7800 and two cyphers from 100. then divide 78 the remainder of 7800 by 103. facit 8034 for divider, then the 38 ſhould bee multiplied by 20 to bring it into ſhillings, which conſiſts of 10 and 2. but inſtead thereof I divide my diuider by 2 and prefix a cypher before the product 38 and 112 by multiplying together, facit 425600 for dividem, as in example.

This queſtion conſiſteth of the two latter workings, and whereas I ſhould multiply 10232 and 100 together for divident, and then the facit would be 3 ſh. but I will have the facit to bee pounds, wherfore I divide 100 one of my dividers by 20 facit 5 and then 5. 10 and 32 multiplied make a divident, and 97 is divider, as in example.

(40.) If a cloth content 32 yards be ſold for 10 ſhillings the yard at three moneths, I loſe 12 per cento per anno, the queſtion is how much the whole cloth coſt ready money, without reckoning gaine upon gaine.

12 . . 12 . . 3 *Facit* 3
1 . . 10 . . 32
97 . . 112 . . ---

Facit 116. 9. 10 $\frac{4}{7}$

160004
387
464
987
10

This queſtion alſo conſiſts of the two latter rules, and thus wrought. First I bring 102 $\frac{1}{3}$ into $\frac{3}{1}$ to the fraction in my mind, facit 205 which I multiply by the $\frac{1}{3}$ of 12. facit 1230 for divider, and then I need not carry my denominator to the divident, then multiply 10 by 20 in mind, facit 800. then by 112. facit 89600 then I cut off a cypher of my divider, and another of 100. and the other cypher I bring to my divident, facit 123 for divider, and 896000 for divident.

(41.) If one hundred weight of copperas coſt 12 ſhillings ready money, how many pound weight muſt be ſold for 40 pound at three moneths to gaine 10 per cento per anno, without reckoning gaine upon gaine.

12 . . 10 . . 3 *Facit* 2 $\frac{1}{2}$
12 . . 112 . . 40
102 $\frac{1}{3}$ . . 100 . . ---

123|0 *Facit* 7284 $\frac{62}{123}$ L.

896000
35468
205

(42.) If

(42.) If a yard of cloth be sold for 14 shillings at 6 moneths, I gaine 10 per cento per anno, the question is for how much a yard of the same cloth must be sold to be paid at 9 moneths, to gaine 20 per cento per anno, without reckoning gaine upon gaine.

This question consisteth of the latter two workings, and is thus wrought. First I take the fift part of 105. facit 21. and the $\frac{1}{7}$ of 115. facit 23. then I take 1 of 21 facit 3. and 1 part of 14. facit 2. then two times 23 is 46 for dividend, and 3 for divider for 200 ballance.

12 . . 10 . . 6 *Facit* 5
12 . . 20 . . 9 *Facit* 15
105 . . 100 . . 14
100 . . 115 . . —

21 23 2
3 46

Facit for 15 sh 4 d the yard.

(43.) If one ounce of musk be sold at five shillings, to be paid $\frac{1}{3}$ at three moneths, $\frac{1}{4}$ at 4 moneths, and the rest at six moneths, I gaine 8 per cento per anno, the question is, how much I shall gaine per cento per anno, when one ounce is sold for 5 sh 6 d. to be paid $\frac{1}{2}$ content, $\frac{1}{4}$ at foure moneths, $\frac{1}{4}$ at eight moneths, and the rest at 12 moneths, without reckoning gaine upon gaine.

First it is the usuall manner to multiply the moneths by the time, and the products being added together, make 4.1 moneths, then I say if 12 moneths gaine 8 what shal 4.1 gaine? facit 3. then I multiply the severall paiments of the other bargaine by the time of paiment, and bring them all to one paiment, facit 6 moneths, then I say if 5 sh make 100 to be 103. what doth 5 sh 6 d. facit 115. 3/7 so that the 33. 3/7 is gaine. Then if 6 moneths gaine that, what doth 12 moneths gaine? facit 26. 1/7 &c.

$\frac{1}{3}$ . . 3 . . 1
$\frac{1}{4}$ . . 4 . . 1
$\frac{1}{4}$ . . 6 . . $2\frac{1}{2}$
12 . . 8 . . $4\frac{1}{2}$
Facit 3

$\frac{1}{2}$ . . — . . —
$\frac{1}{4}$ . . 4 . . 1
$\frac{1}{4}$ . . 8 . . 2
$\frac{1}{4}$ . . 12 . . 3
6

5 . . 103 . . 5 . 6
$10,\frac{3}{10}$

6 . . $13\frac{3}{10}$ . . 12 *Facit* $26\frac{1}{7}$ per cento per anno.

(44.) If one Devonshire dozen be sold for three pound, to be paid $\frac{1}{2}$ at six moneths, and the rest at eight moneths, I lose $11\frac{1}{7}$ per cento per anno, the question is how much I shall win or lose per cento per anno, when six are sold for 16 pound, to be paid $\frac{1}{2}$ content, and the rest at eight moneths, without reckoning gaine upon gaine.

First he brings the diverse paiments to one common time, facit seven moneths. Then if 12 moneths lose $11\frac{3}{7}$ what shall 7 moneths lose? facit $6\frac{2}{3}$ wrought by multiplying 11.3 by 7 facit 80. and divide by 12. facit 6.2 as in example. Then subtract 6.2 from 100 remaines $23\frac{1}{3}$ then say if $93\frac{1}{3}$ come of 100, whereof come 3. and the facit of that working would see the price the devonshire dozen cost at first: but for it I leave a blank in the middle working and say, if 1 cost that, what cost the 6. the facit of this worke will shew what the 6 did cost at first. Then if that facit which is the price the 6 did cost doth fall to 16, what shall 100 fall to? Three rules of 4 must be wrought together, and do differ from the usuall manner of working, because the blancke line doth fall in the first place of one of the rules, viz. the later rule, and thus wrought, multiply the 2 latter numbers of the first two rules, and multiply them together, but the 200 ballance, and therefore you need not multiply more than the 3 and 6 together, facit 18 then by the denominator 3. facit 54 for divider, then bring the $93\frac{1}{3}$ into the fraction, facit 280 then by 16. Facit 4480 for divident, which I divide by 6 and 9 because that 9 times 6 is 54. facit $82\frac{26}{27}$ and so much the 100 comes to. Then substract it from 100 and that remaines is lost, which is 17. $\frac{1}{27}$ then say, if 4 moneths loses that, what doth 12 moneths? To worke this, first take the $\frac{1}{4}$ of 4 and that is 1. and $\frac{1}{4}$ of 12 is 3. so that multiply 17. $\frac{1}{27}$ by 3 and it is done. Facit $51\frac{1}{2}$ as in example.

$\frac{1}{2}$. 6 . . 3
$\frac{1}{2}$. 8 . . 4

12 . . $11\frac{3}{7}$ . . 7 *Facit* $6\frac{2}{3}$

80
$93\frac{1}{3}$ . . 100 . . 3
1 . . ---- . . 6
---- . . 16 . . 100
54 280
9 4480
$746\frac{2}{3}$
$82\frac{26}{27}$

$\frac{1}{3}$ . . — . . —
$\frac{1}{3}$ . . 8 . . 4

4 . . $17\frac{1}{27}$ . . 12

Facit he doth lose $51\frac{1}{2}$ per cento per anno.

(45.) A merchant hath three ſorts of linnen cloth, to ſay 700 elles at 3 ſh the ell ready money, 850 elles at 2 ſh 6 d the ell ready money, and 900 elles at 23 d the ell ready money, and he doth ſell the ell one with another for 2 ſh 5 d to be paid $\frac{1}{3}$ at foure moneths, $\frac{1}{3}$ at ſix moneths, and the reſt at eight moneths, the queſtion is whether he doth win or loſe, and how much per cento per anno, without reckoning gaine upon gaine.

1	. . 36	. . 700	*Facit* 25200		$\frac{1}{3}$	. . 4	. . 2	
1	. . 30	. . 850	*Facit* 25500		$\frac{1}{3}$	. . 6	. . $1\frac{1}{2}$	
1	. . 23	. . 900	*Facit* 20700		$\frac{1}{3}$	. . 8	. . 2	
			71400					$5\frac{1}{2}$
1	. . 29	. . 2450	*Facit* 71050					
			71400	. . 350	. . 100			
			$5\frac{1}{2}$	. . ——	. . 12			
			3927 *Facit*	he doth loſe	$1\frac{91}{1105}$	per cent. per an.		
				4200				
				73				

Firſt caſt up what all the cloth is worth at ſeverall prices, facit 71400 d. then ſee what all the cloth comes to at 29 d the ell, facit 7150 d. then ſubſtract that from the other, remaines 350 d. which he loſeth, then ſay if 71400 d (which is the firſt worth of the cloth) loſe 350 d. what will 100. Then if 5.1 loſe that, what ſhall 12 moneths loſe? facit 1. 91 per cento per anno. The latter two rules of 3 are thus wrought. Firſt take the 1 of 714 in your mind, the two cyphers of 100 ballancing the two cyphers of 190. and multiply the 714 by 5. and add in the former ſaying 1 with all facit 3927 for divider, then multiply 350 by 12. facit 4200 for divider, as in example.

(46.) A merchant hath foure sorts of sugar to say, 1160 L at 16 pence the pound ready money, 1340 L at 15 pence the pound ready money, 2000 pound at 14 pence the pound ready money, and 2500 pound at 13 pence the pound ready money, the question is for how much he must sell the pound one with another to be paid $\frac{1}{3}$ content, $\frac{1}{3}$ at foure moneths, and the rest at 6 moneths, to gaine 20 per cento per anno, without reckoning gaine upon gaine.

1	. . 16	. . 1160	*Facit*	18560	$\frac{1}{3}$	. . —	. . —		
1	. . 15	. . 1340	*Facit*	20100	$\frac{1}{3}$	. . 4	. . 1		
1	. . 14	. . 2000	*Facit*	28000	$\frac{1}{3}$	. . 6	. . $1\frac{1}{3}$		
1	. . 13	. . 2500	*Facit*	32500	12	. . 20	. . $1\frac{1}{3}$	*Facit*	$4\frac{1}{6}$

7000 . . 99160 . . 1
600 . . 625 . . —

247900
6197500
103. 175
$14\frac{127}{168}$

Facit at $14\frac{127}{168}$ pence the pound.

First cast up all the foure sorts of sugar, being 7000 l at severall prices, 99160 d. then if he should sell it for a certaine price to be paid at severall times, as in the question Bring all the paiment to one common time, which is 2.1 then say if 12 moneths gaine 20. what shall 2.1 facit 4.1 so that 100 will gaine in 2.1 after the rate of 20 per cento per anno, 4.1. And because that I would avoid fractions, I rather say, if 600 be 625 which is after the rate. for 6 times 4.1 is 25 then I say, if 700 be worth 99160 d what will 1 l. Then againe, if 600 be 625. what is the facit of the first rule? To worke it do thus, first multiply 9916 leaving out the cyphers, being 625. and first by 25 facit 247900 then by 5. saying 6 times 6 is 36. and 9 is 45. set 5 under the figure towards the left hand, &c. and adding still the product of their latter multiplicator, as you go facit 6197500 for dividend, the two cyphers left out, with the cyphers before left out, doth ballance the 3 cyphers of 7000. Remaines 600 to be multiplied by 7. facit 4200 for divider, as in example.

(47) If

(47.) A merchant hath 3 ſorts of velvet, to ſay 113 yards coſt 20 ſhillings the yard ready money, 130 yards coſt 18 ſhillings the yard ready money, 170 yards coſt 15 ſhillings the yard ready money, and he doth ſell the yard one with another for 17 ſhillings, to be paid 100 pound at two moneths, 150 pound at foure moneths, and the reſt at eight moneths, the queſtion is whether he doth win or loſe, and how much per cento per anno, without reckoning gaine upon gaine.

1	20	113	*Facit* 2260	2000	2	4000	
1	18	130	*Facit* 2340	3000	4	12000	
1	15	170	*Facit* 2550	2031	8	16168	
			7150			32168	
1	17	413	*Facit* 7021				

7150 . . 129 . . 100
32168 . . 7021 . . 12

48252 905709
2300012

Facit he doth loſe $4\frac{4172115}{7150}$ per cento per anno.

10868508
16 460

Firſt caſt up what the velvets coſt, facit 7150. then caſt up what hee ſold them for, facit 7021 this ſubſtract from the money they coſt him, reſt 129. then ſay, if 7150 loſe 129. what ſhall 100 then I ſhould divide the aggregat of the product by the aggregat of the moneth, but it would be a great fraction, and therefore I place the aggregat of the product firſt, the firſt number of the ſecond rule, and the aggregat of the moneth for the ſecond number, and 12 for the third, for it is all one to place the aggregat of the products for the firſt number of the ſecond rule, and the aggregat of the money for the ſecond number, or divide the aggregat of the product by the aggregat of the moneyes, and to ſet down the quotus for the firſt number, and a blanck for the middle number. But the two latter rules are thus wrought Firſt multiply 32168 by 7150. leaving out the cypher, and firſt by 15. And becauſe the firſt number of the product is a cypher, I leave it out alſo, facit 48252. then by 7. ſetting the product of it under the 4 place, two cyphers are out, and 2 in the 3 number, and 5 I do add into 7 times 8 &c then for the divident, 100 doth ballance the two cyphers of the divider, then multiply 7021 by 124 facit 905709 then by 12. facit 10860508 for divident, as in example.

(10.) A merchant hath 740 yards of velvet, whereof if he sell 300 yards for 20 shillings the yard to be paid 100 l content, 100 pound at three moneths, and the rest at 6 moneths, and then sell the rest for 19 shillings the yard, to be paid 200 l content, 100 l at two moneths, and the rest at foure moneths, he doth gaine 20 per cento per anno, the question is how much the yard cost him ready money, without reckoning gaine upon gaines.

1 . . 20 . . 300 *Facit* 300
1 . . 19 . . 440 *Facit* 408
$103\frac{233}{359}$ . . 100 . . 718
37210 359
740 . . — . . 1

137677

Facit 18 sh $8\frac{91702}{137677}$ d the yard.

257762 08
3200 8 5 4 2
19943 0
2 3 2 9
17

100 . . — . . —
100 . . 3 . . 200
100 . . 6
200 . . —
100 . .
118 .

718
3 .
2154

1398

First cast up all the velvet at both the prices they are sold at, and they come to 300 and 418 then multiply the several summes he should receive by the severall time of paiments, and the aggregate of the product is 1572. and the aggregate of the summe is 718. then the usuall manner is to divide the aggregat of the product by the aggregat of the summe, and then the 718 will be denominator, and 1572 will be numerator. But for the easier working, I let it stand as it doth, for 718 being denominator, should be brought to the first number, and the fraction being reduced would be 1571 againe, which will be to tie a knot and untie it againe, and therefore I worke it as it is, and do multiply 718 by 2 facit 2154 for div. der, 1572 by 5 for 7860 for divident, being divided by that divider for 2. and a fraction, which is gaine upon 100 in that time which is the common time of all the severall paiments, and 2 and 5 are for brevity sake placed for 12 and 10. for if 12 moneths will gaine 20. 2 moneths will gaine 5 in like proportion. Now I should know what one yard of velvet cost, for the question saith, I gaine 20 per cento per anno, and they were told for 718. and therefore I say, if if 10. 2 3 3 come of 100. whereof come 718. then I say againe, if 740 which is the number of yards, cost that, what did one yard cost? thus wrought, first reduce the 103 and the fraction, facit 37210. This should be multiplied by 740 but then the divider would be too great, and therefore I should multiply one of my divider 120 to bring it into shillings, but I rather chuse to divide 740 one of my dividers by 420 in mind, facit 3 rest the remainder 260 which I multiply by 720 facit 187677 for divider, then I carry my denominators to their denominator and multiply it, then facit 257762 for divident, as in example.

QVESTIONS

QVESTIONS OF BARTERING ONE WARE FOR ANOTHER.

* * *
* *

(1.)

Two merchants barter, the one hath pepper at 29 d the pound, the other hath sugar at 14 d the pound, the question is how many pound of sugar he must give for 298 pound of pepper. Answer. Such reason as the price of one pound of sugar hath to the price of one pound of pepper, such reason must 298 pound have to the weight of sugar that he must give for the pepper.

Consider, that your pepper is of a great price, and therfore you must have the fewer pounds of pepper, and more pounds of sugar, & in the question which is done by considering that 29 is that 14 and $\frac{1}{14}$ part of 14, and therefore I double the latter number, and add the $\frac{1}{14}$ part of the latter number to the double, as in example.

14 . . 29 . . 298
298
$21\frac{3}{7}$

Facit $617\frac{3}{7}$ L of sugar.

(2.) Two

(10.) A merchant hath 740 yards of velvet, whereof if he sell 300 yards for 20 shillings the yard to be paid 100 l content, 100 pound at three moneths, and the rest at 6 moneths, and then sell the rest for 19 shillings the yard, to be paid 200 l content, 100 l at two moneths, and the rest at foure moneths, he doth gaine 20 per cento per anno, the question is how much the yard cost him ready money, without reckoning gaine upon gaines.

1 . . 20 . . 300 *Facit* 300
1 . . 19 . . 440 *Facit* 408
$103\frac{233}{359}$ . . 100 . . 718
37210 359
740 . . — . . . 1

137677

Facit 18 sh $8\frac{91702}{137677}$ d the yard.

100 . . — . . —
100 . . 3 . . 300
100 . . 6 . . 600
200 . . — . . —
100 . . 2 . . 200

118 . . 4 . . 472

718 1572

3 . . 5 . . —

2154 $3\frac{233}{359}$

7860
1398

25776208
1200854 2
199430
2329
17

I first cast up all the velvet at both the prices they are sold at, and they come to 300 and 418 then multiply the several summes he should receive by the severall time of paiments, and the aggregate of the product is 1572. and the aggregate of the summe is 718. then the usuall manner is to divide the aggregat of the product by the aggregat of the summe, and then the 718 will be denominator, and 1572 withe numerator. But for the easier working, I let it stand as it doth, for 718 being denominator, should be brought to the first number, and the fraction being reduced would be 1571 againe, which withe to tie a knot and untie it againe, and therefore I worke it as it is, and do multiply 718 by 3 facit 2154 for divider, 1572 by 5 for 7860 for divident, being divided by that divider for 3. and a fraction, which is gaine upon 100 in that time which is the common time of all the severall paiments, and 3 and 5 are for brevity sake placed for 12 and 20. for if 12 moneths will gaine 20. 3 moneths will gaine 5 in like proportion. Now I should know what one yard of velvet cost, for the question saith, I gaine 20 per centoper anno, and they were sold for 718. and therefore I say, if 12 3 3 come of 100. whereof come 718. then I say againe, if 740 which is the number of yards, cost that. what did one yard cost? thus wrought, first reduce the 103 and the fraction, facit $\frac{37210}{359}$. This should be multiplied by 740. but then the divider would be too great, and therefore I should multiply out of my divider 720 to bring it into shillings, but I rather chuse to divide 740 one of my dividers by 420 in mind, facit $\frac{37210}{359}$. the remainder 359. then I multiply 3721 by 24. facit 137677 for divider, then I carry my denominators to that denominator and multiply them facit 25776208 for divident, as in example.

QVESTIONS

QVESTIONS OF BARTERING ONE WARE FOR ANOTHER.

* * *
* *

(1.)

TWo merchants barter, the one hath pepper at 29 d the pound, the other hath ſugar at 14 d the pound, the queſtion is how many pound of ſugar he muſt give for 298 pound of pepper. Anſwer. Such reaſon as the price of one pound of ſugar hath to the price of one pound of pepper, ſuch reaſon muſt 298 pound have to the weight of ſugar that he muſt give for the pepper.

14 . : . 29 . . 298.
298
$21\frac{3}{7}$

Facit $617\frac{2}{7}$ L of ſugar.

Conſider, that your pepper is of a great price, and therfore you muſt have the fewer pounds of pepper, and more pounds of ſugar, as in the queſtion which is done by conſidering that 29 is that 14 and $\frac{1}{14}$ part of 14 and therefore I double the latter number, and add the $\frac{1}{14}$ part of the latter number to the double, as in example.

(2.) Two

(2.) Two merchants barter, the one hath 2000 pound of sugar at 14 pence the pound, the question is, how much brasill at 18 sh the hundreth the other must give for all his sugar.

18 . . 14 . . 2000

$$\begin{array}{r} 444\frac{4}{9} \\ \hline 2555\frac{5}{9} \end{array}$$

Facit $129\frac{17}{18}$ C.

Consider 14 doth 4 that is 2 of 18. and therefore I take the 3 of 2000 which is done by multiplying 2000 by the number in my mind. and dividing the product by 9 as in the example, and then that quotus would have been the facit, if the first number had beene 18 d. but being 18 sh. which is 12 times as much, therefore the same quotus which is 2555 5/9 is 12 times too much, wherefore I divide by 12. and the quotus is the true facit.

(3.) Two merchants barter, the one hath 9118 ells of linnen cloth at 18 d the ell, for the which the other doth give him 90 clothes, the question is at how much a cloth doth come to stand. Answer. Such reason as the number of the clothes hath to the number of the elles of linnen cloth, such reason must 18 d have to the money that one cloth doth come to stand in.

90 . . 9118 . . 18

Facit { l 75 . 19 . 8 ; sh 11 9 ; d 11 80/90 }

As 90 cloths is to 9118 els, so is 18 d to the facit 7 l 11 sh 11. 3 d Take the 9 part of 90 which is 10. and the 1 of 18. which is 2. then cast 9118 at 2 d by taking the 1 of it, placing a prick at the right hand for the cyphers of 120. facit 751 19 sh 8 d. divide by 10 facit 7 l 11 sh 11 3 d.

(4.) Two merchants barter, the one hath 43 C of copperas at 8 sh the hundreth, for the which the other doth give him 20 C of brasill: the question is, in how much the hundreth of brasill doth come to stand.

20 . . 43 . . 8

86

Facit 17 sh $2\frac{1}{2}$ d.

As 20 C is to 43 C. so is 8 sh to the facit 17 12 sh 2 2/5 d. Take the 1 of 20 which is 5. and 1 of 8 sh is 2 sh: then multiply the middle by the latter, and divide by the first.

(5.) Two

(5.) Two merchants barter, the one hath clothes at 9 ſh the yard ready money, and in barter he doth ſell them at 10 ſh the yard: the other hath canvas at $8\frac{1}{2}$ d the ell ready money, the queſtion is at what price he muſt ſell it in barter, that neither ſurmount the other. Anſwer. Such reaſon as 9 ſh hath to 10 ſh. ſuch reaſon muſt the price that one ell of canvas is worth in ready money, have to the price that it muſt be ſold for in barter.

As 9 ſh is to 10 ſh ſo is 8.1 to the facit 9.4 d. multiply the laſt by 10. ſaying 10 halfes is 5. and 10 nines 8 is 80. and 5 makes 85. which divide by 9.

$$99 \;.\; 10 \;.\; 8\tfrac{1}{2}$$
$$85$$

Facit at $9\frac{5}{9}$ d.

(6.) Two merchants barter, the one hath gumme at 3 l 10 ſh the hundreth ready money, and in barter he doth ſell it for 4 l the hundreth: the other hath kerſeys which he doth ſell in barter for 50 ſh the kerſey, the queſtion is how much the kerſey doth come to ſtand in ready money. Anſwer. Such reaſon as 4 l hath to 3 l 10 ſh. ſuch reaſon muſt the price that one kerſey is ſold for in barter have to the price that it commeth to ſtand in ready money.

As 4 l is to 3 l 10 ſh. ſo is 50 ſh to the facit 43 ſh 9 d. Take away $\frac{1}{4}$ from 4 l. which is 10 ſh. to make inequality with the middle number and likewiſe the $\frac{1}{4}$ of 50 ſh which is 12. which ſubſtract from 50 ſh. there reſt 38 the facit 43 ſh 9 d. as in example.

$$4 \;.\; 3.\; 10 \;.\; 50$$
$$6\tfrac{1}{4}$$

Facit at 43 ſh 9 d.

(7.) Two merchants barter, the one hath cinamon at 4 ſhillings the pound ready money, and in barter he doth ſell it for 5 ſhillings the pound, the other hath cottens at 14 pence the yard ready money,

First cut off the cyphers from 100 and 90. then 5 in 10 two times, and 5 in 5 once, then 2 times 4 is 8 for divider, and 9 times 14 is 126 for divident, as in example.

ney, the question is for how much the yard must be sold in barter, to lose 10 per cento.

4 . . 5 . . 14
100 . . 90 . . —

8 126

Facit at 15¾ d the yard.

First if 3 sh rise to 3 sh 6 d. what shall 3 l rise to? facit 3 l 10 sh. and then if 3 l 10 sh surmount 5. what shall 100. First bring 3 l 10 sh into crownes, facit 14 for divider, and the middle number 5 l account as one, then if 14 surmount 1. what will 100. so divide 100 by 2 and 7. because that 2 times 7 is 14. as in example.

(8) Two merchants barter, the one hath tapistry at 3 shillings the ell ready money, and in barter he doth sell it for 3 sh 6 d the ell: the other hath wooll at 3 l the hundreth ready money, and in barter he doth sell it for 3 l 15 sh. the question is, which of them doth surmount the other, and how much per cento.

3 . . 3.6 . . 3 *Facit* 3 l 10 sh.
3.10 . . 5 . . 100

14 50
7⅐

Facit he with the wooll doth surmount the other by 7⅐ per cento.

First cut off the cyphers from 50 and from 10. and then multiply 112 by 5. facit 560. from which cut off the cyphers, and likewise from 8000. then multiply 8000 by 3. facit 24000. then take 1 of 500 for divider, facit 70. 1/7 of 24000. fa. 300 for divident.

(9.) Two merchants barter, the one hath 8000 pound of allume at 30 sh the hundred weight, for the which the other doth give him 50 kerseys, the question is at how much one kersey doth come to stand.

112 . . 30 . . 8000
50 . . — . . 1

560 2400
7 300

Facit at 42 sh 10⅐ d.

(10.) Two

(10.) Two merchants barter, the one hath a certaine number of peeces of fuſtian at 18 ſh the peece, for the which the other doth give him 1806 ells of linnen cloth at 16 pence the ell, and yet 30 pound in money, the queſtion is how many peeces of fuſtian he had.

First if one bee worth 16. then what 1806 bee worth ſo many ſhillings and ſo many groats, which is 602 ſh. and 30 l. multiply by 20. facit 600. all added together, facit 3008. then if 18 ſh buy 1, what doth 3008. divide by 2 & 9. becauſe 2 rimes 9 is 18. facit 167. 1/3

1 . . 16 . . 1806
602
600

18 . . 1 . . 3008
1504

Facit 167 1/3 peeces.

(11.) Two merchants barter, the one hath chamlets at 3 pound the peece ready money, which he doth ſell in barter for 3 l 15 ſh the peece, the other hath fuſtians at 35 pound the bale ready money, the queſtion is at what price the bale of fuſtians muſt be ſold in barter to gaine 10 per cento.

First bring the 3 l and the 3 l 15 ſh into crownes, facit 12. 15. then conſidering that 15 is more than 12 by 3. which is 1/4 of 12. therefore the facit muſt be 35. and then 1/4 of 35. which is 8. 15. facit 43. 15 then conſidering that 11 is more then 10 by 1/10 of 10. and therefore I muſt take the 1/10 of 43. 15. and add't to it, as in example.

10 . . 11 . . 35
3 . . 3. 15 . . —

12 . . 15 43. 15. —
4. 7. 6

Facit at 148. 2. 6

QVESTIONS

QVESTIONS OF BARTERING ONE WARE for another, and to have *part Money*.

(1.)

In this queſtion of barter and the like, if you either give or demaund any part of the barter in ready money, ſubſtract your demaund both of the price and barter, and worke upon the reſt.

TWo merchants barter, the one hath bayes at 2 ſhillings the yard ready money, and in barter he doth ſell it at 2 ſhillings 6 pence the yard, and will have $\frac{1}{4}$ in ready money, the other hath hoppes at 30 ſhillings the hundreth ready money, the queſtion is at what price he muſt ſell them in barter, that neither ſurmount the other.

2.—. 2.6
—.6 —.6

1.6 . . 2.—. . 30

Facit at 40 ſh the hundreth.

(2.) Two merchants barter, the one hath tinne at 50 ſhillings the hundreth ready money, and in barter he doth ſell it for 8 pound the hundreth to be paid $\frac{1}{3}$ ready money, the other hath ſilke, which he doth

doth ſell in barter at 28 ſh the pound, the queſtion is in how much a pound of ſilke doth come to ſtand in ready money.

In this queſtion you muſt do as in the latter, ſubſtract which hee doth demand in money.

60 . . 50
20 . . 20
40 . . 30 . . 28
7

Facit at 21 ſh the pound.

(3.) Two merchants barter, the one hath clothes at 8 l the cloth ready money, and in barter he doth ſell them for 9 l the cloth: the other hath worſteds at 30 ſh the peece ready money, and in barter he doth ſell them for 33 ſh the peece, the queſtion is, which of them doth ſurmount the other, and alſo what part he which is ſurmounted ſhould have demanded in ready money to have made the barter equall.

In this queſtion and the like, if you will know whether you ſurmount, or be ſurmounted, conſider how much you ſurmount, and upon how many, as if you ſurmount 1 in 9. the other 3 in 33. ſay if 1 ſurmount come of 9. of how much muſt 3 ſurmount come? facit of 27.

1 . . 9 . . 3 *Facit* 27
33
6

Facit he with the worſteds is ſurmounted, and ſhould have demaunded $\frac{6}{11}$ in ready money.

(4.) Two merchants barter, the one hath a certaine number of peeces of moccado at 19 ſhillings the peece, for the which the other doth give him $\frac{1}{7}$ in ready money, and for the reſt 400 yards of velvet at 16 ſhillings the yard, the queſtion is, how many peeces of moccado he had.

400
200

19 . . 16 . . 600

Facit 505 1/19 peeces.

9600
2 5

First consider that if he with the velvet gaine his 1 1/3 ready money, and 400 peeces hee gaine in all as good as 600 peeces at 16. The other hath morcado at 19 sh the peece, which is the great price, and therefore must be fewer peeces: then I say, as 19 is to 16. so is 600 to the facit, as in example.

(5.) Two merchants do barter, the one hath kerseys at 50 shillings the kersey ready money, and in barter he doth sell them for 62 sh 6 d the kersey: the other hath velvet at 18 sh the yard ready money, the question is, for how much he must sell the yard in barter to be paid 1/2 in ready money, that neither sumount the other.

50 . . 62 . 6
12 . 6 12 . 6

62 . 6 . 75 . . 18
3 6

125 108
5

Facit at 21 sh 7 1/19 d.

First consider that he with the velvet would sell his velvet so that he may have the 1 1/2 ready money, therefore I consider, if the other gaine 1 1/6 ready money, hee gaineth 5 part in barter, and therefore he must add the 1 1/5 to it, and it stands thus: if 62 sh 6 d rise to 75 sh. what shall 30 rise to? facit 41 sh 7. 1 d. 1/19 wrought thus, first bring 62 sh 6 d into sixpences, facit 125. then take the first part twice of it, facit 5. and 75 likewise by twice 5 facit 3. then consider that 18 must be multiplied by 3 and by 2. which is done at once, placing 6 under it, and dividing by 5. as in example.

(6.) Two

(6.) Two merchants barter, the one hath 300 yards of velvet at 22 ſhillings the yard, for the which the other doth give him 80 pound in money, and for the reſt cloth at 13 ſhillings the yard; the queſtion is how many yards of cloth he muſt give.

First caſt up what the 300 yards of velvet are worth, facit 6600 ſh. then caſt how many is in 80. for ſo hee hath in money all his velvet, remains 5000 ſh. then ſay, if 13 ſh buy 1 yard what will 5000 ſh. facit 384. 8 yards. 13

1 . . 22 . . 300

6600
1600

13 . . 1 . . 5000

Facit $384\frac{8}{13}$ yards.

(7.) Two merchants barter, the one hath bayes at 2 ſhillings the yard ready money, and in barter he doth ſell them for 2 ſhillings 6 pence the yard: the other hath hoppes at 30 ſhillings the hundreth ready money, and in barter he doth ſell them for 40 ſhillings the hundreth, the queſtion is what part he with the hoppes ſhould demaund or give to the other, to be paid in ready money, to gaine 10 per cento.

First ſay, if 10 make 11 what will 30. facit 33. ſo much it comes to at 10 per cento, then ſay, if 1 ſurmount come of 2. whereof ſhould 7 ſurmount come 7 facit 14. then ſubſtract 28 from 33. remaines 5 and ſo much hee ſhould demaund in ready money, viz. 1 5

10 . . 11 . . 30 *Facit* 33
1/5 . . 2 . . 7 *Facit* 28

5

40

Facit he muſt demaund $\frac{1}{5}$ in ready money.

(8.) Two merchants barter, the one hath cloth at 13 ſhillings foure pence the yard ready money, and in barter he doth ſell it for 16 ſhillings the yard to be paid $\frac{1}{3}$ content, the other hath velvet at 19 ſh 4 d the yard ready money, and to ſell it in barter, he will have $\frac{1}{4}$ ready money, the queſtion is, at what price he muſt ſell the yard of velvet in barter, that neither ſurmount the other.

First hee that ſold the cloth in barter at 16 will have $\frac{2}{3}$ in money, and therefore I take away $\frac{2}{3}$ of 16. and ſo much from 13 ſh 4 d. remaines 5 ſh 4 d which hee doth ſell for 8 ſh in barter: the other hath velvet at 19. and to ſell it in barter, hee will have $\frac{1}{4}$ in money, and then he muſt have $\frac{3}{4}$ in commodities, and therefore I add $\frac{1}{3}$ part of the fourth ſaid $\frac{3}{4}$ which is 2 ſh 8 d. facit 8 in value, and in barter 10 ſh 8 d. then ſay if 8 ſh giue 10 ſh 8 d to what ſhall 19 ſh 4 d To worke it, conſider that 10 ſh 8 d is 2 ſh 8 d more than 8 ſh, which is the $\frac{1}{3}$ of 8 ſh. and therefore I add 1 of 19 ſh 4 d to it, facit 25 l 9 ſh $\frac{1}{3}$ d.

13.4 . . 16
8

5.4 . . 8
2.8 . . 2.8

8.— . .10.8 . . 19.4
. 6.5$\frac{1}{3}$

Facit at 25 ſh 9$\frac{1}{3}$ d.

(9.) Two merchants barter, the one hath velvet at 18 ſhillings the yard ready money, and in barter he doth ſell it for 20 ſhillings the yard, to be paid $\frac{1}{3}$ ready money: the other hath kerſeys at 50 ſhillings the peece ready money, the queſtion is, for how much they muſt be ſold in barter to gaine 10 per cento.

18 . . 20
6⅓ 6⅓
13⅓ . . 13⅓ . . 50
10 . . 11 . . —
34 440
64. 8
22608
1646
28
1

Facit at 3 l 4 sh 8 4/17 d the kersey.

First take 1 both from the worth & from the price in barter: then say if 12.4 d rise to 13.8 d. what shall 50. then if 10 rise to 11 what shall the facit of the first worke rise to? to worke this, first bring the 11.2 in, to the fraction, facit 34 for divider, then bring the middle number into the fraction, facit 440. multiplied by 11 facit 4420. then take 1 of 10 is 1. and 1 of 50 is 5. then multiply 40 by 5. facit 200 for divident, divided by 34. facit 64 sh 8 d.

(10.) Two merchants barter, the one hath clothes at 6 l the cloth ready money, and in barter he doth sell them for 7 l the cloth, and to be paid 1/3 ready money, the other hath muske at 7 sh the oz. ready money, which he doth sell in barter for 8 sh the oz. the question is which of them doth surmount the other, and how much per cento.

6 . . 7
2⅓ 2⅓
3⅓ . . 4⅓ . . 7 *Facit* 8 10/11
11 14
8 . . 10/11 . . 100
125
11 4/11

Facit he with the clothes doth surmount the other by 11 4/11 per cento.

First take away 1 3/7 part from the money and from the barter, remaines 3.2 and 4.2 then I say if 3.2 bee sold for 4.2 what shall 7 be sold for? facit 8. 10/11. To worke this, first reduce the first & second number into the fraction, facit 11 14. then multiply 4 by 7. and divide the product by 11. facit 8.10/11. then say if in 8 1/11 I am surmounted the 10/11 how much am I surmounted in 100 To work, first for to prefixe one cypher in your mind before 100. and then divide by 8. if I should carry the denominator 11, to 8. it would be 88. but instead thereof I consider that 88 consisteth of 8 and 11. and therefore I divide 100 first by 8 and then by 11. as in example.

(11.) A merchant doth buy two peeces of velvet, content yards $27\frac{1}{2}$ and $29\frac{1}{2}$ at 17 shillings foure pence the yard, in paiment whereof he hath given one cloth content yards $33\frac{1}{2}$ at 12 shillings 9 pence the yard, the question is how much he must pay yet in money.

First set downe the price of the velvet, and then the price of the cloth under it, which he hath in part of paiment, then substract the price of the cloth from the price of the velvet, remaines 4 sh. 7 d. then say, if a yard lack 4 sh 7 d. what doth $33\frac{1}{2}$ yards lacke? so that all togerher doth but satisfie for $33\frac{1}{2}$ of the $27\frac{1}{2}$ and $29\frac{1}{2}$ yard of velvet, but there are yet $23\frac{1}{8}$ yards of velvet to satisfie for, and therefore I say againe, if 1 yard be worth 17 sh 4 d. what are $23\frac{1}{8}$ this

17. 4
12. 9

1 . . 4. 7 . .
1 . . 17. 4 . .

$27\frac{1}{2}$ . . $29\frac{1}{2}$

$33\frac{1}{2}$
$23\frac{1}{8}$

11. 11. 3
5. 15. $7\frac{1}{2}$
2. 6. 3
—. 7. $8\frac{1}{2}$
6. 14. —
—. 16. 9
—. 2. $9\frac{1}{2}$

Facit 27. 14. $4\frac{1}{2}$

rule being next hand, I worke this, and for 10 sh of the 17 sh 4 d I take the $\frac{1}{3}$ of 23. and $\frac{1}{8}$ which I suppose to be 23 l 2 sh 6 d facit 11 l 11 sh 3 d. and for 5 sh $\frac{1}{3}$ of that, and for 2 sh the $\frac{1}{5}$ of 11 l 11 sh 3 d. facit 2 l 6 sh 3 d. and for 4 d the $\frac{1}{3}$ of the last facit 7 sh 8. 1 d then I work the first of the rules of 3. accounting the $33\frac{1}{3}$ to be $33\frac{1}{3}$ 10 sh then for 4 sh I take $\frac{1}{3}$ of $33\frac{1}{3}$ 10 sh and for 6 d the $\frac{1}{3}$ of that, and for a penny the $\frac{1}{3}$ of that.

(12.) Two Merchants barter, the one hath 40 clothes at 5. pound the cloth ready money, which he doth sell in barter for 5 pound 10 shillings the cloth, and to be payd 100 pound in ready money: the other hath wines at 8 pound the tunne ready money, the question is for how much he must sell the tun in barter, that neither surmount the other.

40 40

5 . 10

200 220

100 100

100 . . 120 . . 8

1 . 12

First cast up the 40 clothes both at 5 l and 5 l 10 sh. facit 200 and 220 then substract 100 from both, remaines 100 and 120. then say, if 100 rise to 120. what shall 8 rise to? then consider that 120 is more than 100 by the 1 part of 100. and therefore the facit must be the 1 part of 8 more than 8. which is 1 l 12 sh. added facit 9 l 12 sh.

Facit at 9 l 12 sh the tun.

(13.) Two merchants barter, the one hath velvet at 14 shillings the yard ready money, and in barter he doth sell it for 16 shillings the yard: the other hath 300 kerseys at 45 shillings the peece ready money, and he doth sell them in barter for 50 sh the peece, the question is how much money hee must demaund or give to be paid content to gaine 10 per cento.

First hee with the cloth will gaine 10 per cento, and will know how much hee should demaund or give to be paid in ready money, and to know this, first he saith, if 10 rise to 11. what must 45 rise to? facit 49 1/2

10 . . 11 . . 45

4 1/2 *Facit* 49 1/2

then againe, if 2 surmounting come of 14. whereof came 1 facit 3 1/2 for hee must rate his kerseys at 49 1/2 to gaine 10 per cento, so that he riseth 1 upon 49. now to know how much hee should receive in money, hee saith, if 2 surmounting come of 14. whereof came 1 facit of 3 1/2. which 3 1/2 you must substract from 49 1/2 remaines 46. and so much he must demaund in money for every yard: then say, if 1 yard must have 46 in money, what must 300 yards have? facit 690 l. and so much hee with the kersey must demaund in money to gaine 10 per cento per anno.

2 . . 14 . . 1/2 *Facit* 3 1/2

1 . . 46 . . 300 *Facit* 690 pound.

Facit he with the kerseys must demand 690 pound in ready money.

(14.) Two merchants barter, the one hath 140 fodder of lead at three pound 10 ſhillings the fodder ready money, which he doth ſell in barter for foure pound the fodder, to be paid 150 pound in ready money: the other hath damaske, which he doth ſell in barter for 16 ſhillings the yard, the queſtion is in how much a yard of damaske doth come to ſtand in ready money.

First caſt up the 140 fodder of lead both at 4 l the fodder, and at 3 l 10 ſh facit 560 and 490 then take away the ready money, which is 150. remaines 410 and 340. this 340 is the value of the commodity, and 410 is the price of it in barter, then ſay, if 410 come of 340. what ſhall come 16 ſh. facit 13 ſh 3 9/41 d. To worke this, firſt cut off the two cyphers, then multiply 34 by 16. facit 544 for dividend, which divide by 5. facit (ut ſupra)

140	140
4	3. 10
560	490
150	150
410 . .	340 . . 16

Facit at 13 ſh 3 9/41 pence.

5442
2319
73

(15.) Two merchants barter, the one hath a hundreth clothes at 5 pound the cloth ready money, and in barter he doth ſell them for ſix pound the cloth, to be paid a hundreth pound in ready money: the other hath taffata at 5 ſhillings the ell ready money, the queſtion is for how much he muſt ſell the ell in barter to loſe ten per cento.

100	100
5	6
500	600
100	100
400 . .	500 . . 5
100 . .	90 . . —
8	45

First cast up the 100 cloathes both at 5 l. and at 6 l. facit 500 and 600. from both which substract the ready money, and there remaines 400 and 500. then say, If 400 rise to 500, what shall 5 sh. then if 100 come to 90. what shall the facit of the 5 sh fall to facit 5 sh 7.1 d. to work the

Facit at 5 sh 7 1/5 d the ell.

two latter rules, cut off three cyphers of the two dividers, and three cyphers of the divident then say, the 1 part of 40 is 8 for divider, and 1 of 5 is 1. then 5 times 9 is 45 for dividend.

(16.) A merchant hath cloth which cost him nine shillings the yard ready money, and he may either sell it at ten shillings the yard to be paid at foure moneths, or barter it for velvet at seventeene shillings the yard, which is worth but 16 shillings to be paid 1/4 ready money, 1/2 at three moneths, & the rest at 6 moneths, the question is, which is the better bargaine, without reckoning gain upon gaine.

First bring the diverse paiments for the velvet to one, facit 2.1 moneth, then say, if 4 moneths gain 4. what shall 2.1 gaine facit 9 then say, if 9 9 come

1/2 . . 6	. . —	4 . . 1	2 1/2	Facit 9
1/4 . . 3	. . 2 1/2	9 . . 9 . .	16 1/2	
		9 . . 10 . .	—	
		153	17 1/2	
Facit it is best to sell it at			2640	
10 sh for 4 moneths.			119	
			3	

of 9 whereof there 16.1 for 9 is worth 9 and the 9 at 2.1 moneths end, but I would know what ready mony this 16.1 came on this second worke being wrought would shew it, then say againe, if 9 rise to 10. what shall the ready money which is 16. 1 come on facit 17.13 so that after the rate he should have the velvet after the rate of 17 9/17 and therefore he were better to take them at a lower rate, viz. at 17 sh the yard, for the time is accounted nothing, because it is not interest upon interest. And thus wrought, first bring 9. 9 into the fraction, facit 153 for divider, then carry your denominator 16 to the third number, saying 16 halfes is 8 then 16 times 16 and that 8 facit 264. whereunto prefix a cypher for 10. facit 2640 for dividend, the 2 ballancing each other.

(17) Two

(17.) Two merchants barter, the one hath 2000 yards of ſattin at 8 ſhillings the yard ready money: the other hath cloth at 15 ſhillings the yard ready money, and in barter he doth ſell it at 17 ſhillings the yard, and to have three hundred pound ready money, the queſtion is at what price the ſattins muſt be ſold in barter, that neither ſurmount the other.

First he doth caſt up what the ſattins come unto in money, facit 16000 ſh. and bring the other into 300 l. in money, hee doth put 300 l. in money to the value of his ſattins, facit 22000 ſh. then if 15 riſe to 17 what ſhall 22000. to work it, firſt multiply it by 17. facit 374000. then divide by 5 and 3 which is 15. facit 18933 1/3 from which ſubſtract 300 l. viz. 6000 ſh. remaines 18933. 1/3 for middle number: then if 15000 riſe to 18933. 1/3 what ſhall 8 riſe to? To worke this, I cut off 3 figures of the middle number for the 3 cyphers of my divident, remaines 18 to be multiplied by 8 and divided by 16. Then I conſider that 1 of 8 is 1. and 1 of 16 is 2. and therefore I divide 18 by 2. facit 9 ſh. then I ſhould multiply the remainder by 12 and by 2. but inſtead thereof I multiply the remainder by 1/6 of 16. and ſo need not divide it at all, and then my divident is 1000. as in example.

2000 . . 15 . . 17 . . 22000

8

16000 6000 22000

374000

74800

24933 1/3

6000

16000 . . 18933 1/3 . . 8

Facit at 9 ſh 5 3/5 d the yard. ſh 9 | d 5 | 600 | 1000

(18.) A merchant hath a bill of debt of 600 pound, to be paid 200 pound at 2 moneths, 200 pound at 4 moneths, and the reſt at 8 moneths, for the which one will give him velvet at 21 ſhillings the yard, which is worth but 19 ſhillings the yard ready money, the queſtion is how much he ſhould loſe per cento per anno, without reckoning intereſt upon intereſt.

200

100 . . 2 . . 400 21
200 . . 4 . . 800 19

300 . . 8 . . 1600 21 . . 2 . . 100
6 28 $4\frac{2}{7}$ . . — . . 12

Facit $4\frac{2}{7}$ mo. 98 *Facit* $24\frac{24}{49}$ per cento per anno.

2400
48

Firſt ſet downe the ſeverall paiment, and multiply them by their time when they are due, then add the products together, and the moneths together, and divide the product of the multiplication by the product of the moneths, and that quotus ſhewes the common time for all the paiments, then ſet downe 21 ſh and the 19 ſh. and ſubſtract it from 21. remaines 2 ſh. then ſay, if 21 loſe 2. what ſhall 100. and 4. 2 loſe the product of the firſt multiplicator, what ſhall 12 moneths loſes to work it, firſt multiply 21 by 4 facit 84. then add to the 2 of it, which is 14. facit 98 for divider, then multiply 2 and 12 and 100 together, facit 2400 for dividend, being divided facit 24. 24. the 4 is 1 of 98. and 49 the 1 of 98.

(19) Two merchants barter, the one hath grograms at 3 pound the peece ready money, and in barter he doth ſell them for foure pound the peece: the other hath 50 clothes at 9 pound the cloth ready money, and in barter he doth ſell them for eleven pound the cloth; more he hath a thouſand boults of thred at foure ſhillings the boult ready money, and in barter he doth ſell the boult for five ſhillings, the queſtion is, how much money he muſt demaund or give to be paid content, to gaine twenty per cento in his clothes, and to loſe 10 per cento in his thred.

100 . . 120 . . 9 *Facit* 10$\frac{4}{7}$ 1 . . 10$\frac{1}{7}$ . . 50 *Facit* 510$\frac{1}{2}$

1 . . 3 . . $\frac{1}{3}$ *Facit* $\frac{1}{7}$ 1 . . 5 . . 1000 *Facit* 250d.

100 . . 90 . . 4 *Facit* 3$\frac{1}{7}$ 3$\frac{4}{7}$ . . $\frac{1}{7}$ . . 250

25 — 3 *Facit* 30l.

1$\frac{2}{7}$ . . 3$\frac{1}{7}$ . . 1

7 18 *Facit* 2$\frac{4}{7}$

Facit he must demaund 480 pound to be paid in ready money.

First say if 100 make 120. what shall 9? facit 10.4 and so much it must be sold for to gaine 20 per cento, and by that meanes he doth surmount but 1 in barter, therefore I would know how much he should demaund in money, for the other with the grograms doth surmount 1 upon 3. and therefore I say if one surmount come of 3. whereof doth the 1 surmount come? facit 3 his commodity being worth 10.4 after he had valued it to gain 20 per cento, I do substract 3 from 10.4 rest 10.1 which he should demaund in money upon every cloth, and therefore I cast it up, what summe it amounteth unto, and say, if one cloth require 10.1 in money, what shall 50 facit 510. and so much he with the cloth must demaund for his 50 clothes, selling them at 20 per cento, cloth against grograms at 4 l which are worth but 3 l. and to gaine 20 per cento with his cloth: Item he hath 1000 boults of thred which he would lose 20 per cento by, therefore first he saith, if 100 fall to 90 what shall 4 fall to, for that is the price of a boult ready money, facit 3.3 and so much he must account his thred to be worth to lose 20 per cento, but hee selleth them for 5. and therefore I would know what money hee should gaine with them, and therefore I first substract 3.3 from 5. for so much he sel. them for, remaines 1.2 which he doth surmount unto 3.3 and therefore I say, if 1.2 surmounting come of 3.3 whereof should one surmounting come, facit 2.4 but he did surmount but one upon 3. and therefore should have the rest in money of him that sold the thred, and ban that hath both cloth and thred should gaine with 2.4 in ware 3 in money, and then it is as good as 3 in ready money, and being added to 3.4 the barter, makes it 4 also, and therefore I say, if with 3.4 in barter I gaine 3 in money, what shall I gaine with 480 in barter, for so much the 1000 boults of thred commeth to at 5 sh multiply and divide, and you shall gaine with the thred 301 and must receive for his cloth 510 in money, and therefore I substract 30 from 510. remaines 480. which he must demaund or receive.

(20.) Two

(20.) Two merchants barter, the one hath 1987 Lof ginger at three shillings six pence the pound ready money, and in barter he doth sell it for foure shillings the pound, to be paid an hundred pound content: the other hath waxe at three pound ten shillings the hundred ready money, and he doth sell it in barter for foure pound five shillings the hundred, the question is, which of them doth surmount the other in barter, and how much per cento.

First cast up what the 1987 doth come to at 3 sh 6 in this manner, first say, halfes is 1 and carry 3. then 3 times 7 is 21 and 3 is 24. then 3 times 8 is 24 and 2 is 26 and 9 is 39. because that 1 of 18 is 9. then 3 times 9 is 27 and 3 is 30. and 9 is 39. because that the 1 of 1 is 9 multipli'd through facit 6954.1 that cost 1987 at 4 sh. facit 7948. and so much he selleth it for in barter, then substract away the 100 which he will have in money both from the ready money and barter, remaines 4954.1 then I say, if that rise to 5948, what shall 3 l 10 sh. it ariseth to somewhat, then if as that facit is 4 1 so is 100. facit 101 &c. the two latter rules are thus wrought, first consider that 4954.1 4.1 and 100 are diverse, and the other two dividers, then first carry 2 the denominator to 3—10. say to 1 : 3.1 is 7. then 7 times 8 is 56 &c. facit 41636 for divider, then reduce 4954.1 into the fraction, facit 9909. this multiplied by 4.1. first by 4. facit 39636. and then by 1 facit 2477.1 being added together, facit 42113. this should be multiplied by 1 and 100. for 100 should place two cyphers, but instead thereof I say 100 quarters is 25. and then facit 4211325 for divident, then multiply and divide, as in example.

1987	1987
3.6	4
6954.1	7948
2000	2000
4954.1	5948 . . 3.10
	4.1 . . 100
41636	9909
	39636
	2477.1
	101
	42113.25
	47789
	60

Facit he with the waxe doth surmount the other by $1\frac{6089}{41636}$ per cento.

QVESTIONS

QVESTIONS OF FACTORAGE.

* * *
* *

(1.)

First consider that if the factor shall have the 1/4 of the gaines, his person must needs be esteemed at 1 3/4 so much as the other puts in.

A Merchant doth deliver to his factor 1001 to occupie on this condition, that the factor shall have for his paines and travaile 1/4 of the gaines, the question is, at how much the factors person is esteemed.

3/4 . . 1000 . . 1/4

Facit at 333 l 6 sh 8 d.

First consider that if the factor had put in 300. the whole stocke had been 1100. then say if 1100 gaine 1. what will 300. facit 3/11 cutting off the cyphers of the first and third number.

(2.) A merchant doth deliver unto his factor 800 l to occupie on this condition, that the factor shall have for his paines and travaile such part of the gaines as if he had put in 300 l. the question is, what part of the gaines the factor must have.

800
300

11 . . 1 . 3

Facit the 3/11

(3.) A

(3.) A merchant doth deliver to his factor 1500 l to occupie, on this condition, that the factors person shall be esteemed at 300 l. the question is, how much the factor must have of the gaines, when they find to have gained 10 per cento.

100 . . 10 . . 1500

Facit 25 l.

First consider that if the factors person were esteemed at 300 l. then the whole 1800. and therefore the factor shall have $\frac{1}{2}$ of 150. for so much 1500 doth gaine after 10 per cento.

(4.) A merchant doth deliver to his factor 700 l to occupie, on this condition that the factors person shall be esteemed at 200 l. and at the yeares end they find to have gained 200 l. the question is, how much the factor must have of the gaine.

700
200

900 . . 200 . . 200

Facit 144 . 8 . $10\frac{1}{3}$

First consider that if the factors person bee esteemed at 200 l. the whole stock is 900. then say, if 900 gaine 200. what doth 200 gaine? facit 44 l 8 sh 10. 2 d. $\frac{2}{3}$

(5.) A merchant doth deliver to his factor 1500 l to occupie, on this condition that the factors person shall be esteemed at 300 l. the question is, what part of the gaines the factor must have, when he doth occupie with it 400 l of his one.

1500
400

19 . . 1 . . 4 *Facit* $\frac{4}{19}$
18 . . $\frac{18}{19}$ . . 3 *Facit* $\frac{3}{19}$

Facit the $\frac{1}{19}$ of the gaine

First add the stockes together, facit 1900. then say, if 19 gaine 1. what doth 4. facit $\frac{4}{19}$ then if 1800 gaine 15 what doth 300. facit $\frac{5}{19}$ for I consider that $\frac{3}{5}$ is 1 of 18. and therefore must have the $\frac{1}{2}$ of $\frac{15}{19}$ and because that

3 times 3 is 6. I do divide the numerator of $\frac{15}{19}$ by 3. facit 5. and do multiply the denominator by 2 as in example.

(6.) A

(6.) A merchant doth deliver to his factor 1200 pound on this condition, that the factor shall occupy with it 200 pound of his owne, and then to have the $\frac{1}{7}$ of the gaines, the question is, at how much the factors person is esteemed.

1200
200

1400 . . 1 . . 200 *Facit* $\frac{1}{7}$ sr. $\frac{1}{7}$
$\frac{14}{21}$ . . 1200 . . $\frac{4}{21}$
2400
Facit at 342$\frac{6}{7}$ l.

First add the two stockes of money together, facit 1400 l. then say, if 1400 l gaine 1. what doth 1200 gaine? facit 1 $\frac{1}{7}$ which the factor must have for his money sake, and is to have in all 1 $\frac{1}{7}$ d. you must substract 3. 1 from 1 $\frac{1}{7}$ $\frac{3}{7}$ which to doe I must multiply together, facit 1 $\frac{3}{7}$ then 1 of 21 is 3. $\frac{3}{7}$ then halfe 21. for his money sake he must have 421 for his person sake, then say if 14. 21 come of 1200 l whereof came 14. 21 and because that the denominators are like, I suppose the question to stand thus, if 14 come of 1200. whereof came 4. take the $\frac{1}{2}$ of 4 for multiplier, and divide the product thereof by 1 of 7 facit 342$\frac{6}{7}$ l as in example.

(7.) A merchant doth deliver unto his factor 600 pound to be occupied on this condition, that the factor shall have for his paines and service $\frac{1}{7}$ of the gaines, the question is how much money the factor must occupie with it of his owne, to gaine in all halfe as much as the merchant, and also at how much the factors person is esteemed.

$\frac{4}{7}$ . . 600 . . $\frac{1}{7}$

Facit his person is esteemed at 150 pound.

5 . . 600 . . 1

Facit he must occupie 120 pound of his own.

First it is said that the factor shall have $\frac{1}{7}$ of the gaines, then the merchant must needs have $\frac{4}{7}$ wherefore I say, if 4 come of 600. whereof came $\frac{1}{7}$ facit 150. to work this, you need not carry denomination, because they are alike, but onely divide 600 by 42. and for the next worke I say, if 5 put in 600. what must one put in? facit 120 done by divider 600. by 5 thus done.

QVESTIONS OF COMPANIE WITHOUT TIME.

(1)

TWo merchants made a company, A put in 100 l. B put in 170 l. and they have gained together a certaine ſumme of money, whereof A muſt have 40 l. the queſtion is, how much B muſt have of the gaine. Anſwer. Such reaſon as as the money which A put in hath to his gaine, ſuch reaſon muſt the money which B put in have to his gaine.

As 100 is to 40. ſo is 170 to the facit. Conſider that you may cut off two cyphers from the firſt number, and likewiſe the cyphers from 40 and 170 to anſwer the firſt number, then multiply 40 and 170 of 70. and the product is the facit as in example.

100 . . 40 . . 170

Facit B muſt have 68 l.

(2.) Two merchants made a companie, A put in 175 and they have gained together 98 l. whereof B muſt have ſo oftentimes 5 l. as A muſt have 3 l. the queſtion is how much money B put in the company. Anſwer. Such reaſon as 3 l hath to the money which A put in, ſuch reaſon muſt 5 l have to

As 3 l is to 5 l. ſo is 225 to the facit. Conſider that if B muſt have ſo oftentimes 5 as A muſt have 3. hee did put in as oftentimes 5 l as A put in 3. and therefore the ſame that B muſt have, muſt have ſuch reaſon to 5 l as 175 l hath to 3 l. which being placed as above, multiply and divide by the ordinary and common way, as in example.

the money which B put in.

3 . . 175 . . 5
875

Facit l 291 . 13 . 4 B put in.

In this queſtion conſider that if A had 30 l profit of 200. B muſt needs have his 50 l profit of 333 l 6 ſh 8 d as in example.

(3.) Two merchants made a company, A put in 200 l. and they have gained together 80 pound, whereof B muſt have 50 l. the queſtion is how much money B put in the company.

80
50

30 . . 200 . . 50
10

Facit l 333 . 6 . 8

First conſider that if all their ſtockes being added together do amount to 700. then if 350 l gaine 120 l. 700 muſt needs gaine 240. becauſe 700 is twice 350 l as in example.

(4.) Three merchants made a company, A put in 140 l. B put in 210 l. C put in 350 l. and they have gained together a certaine ſumme of money, whereof C muſt have 120 l. the queſtion is how much they have gained together.

140
210
350

350 . . 120 . . 700
Facit 240 l.

(5.) Two

(8.) Two merchants made a company, A put in 300 l. B put in 450 l. and they have gained together 180 l. the queſtion is how much every one muſt have of the gaine.

First add both their ſtocks together, then ſay, if the whole ſtocke gaine 180 l. what ſhall one of the ſtocks, which being knowne, the other muſt needs gaine the reſt.

300
450

750 . . 180 . . 300
3 12

Facit l 72 for A.
and l 108 for B.

(6.) Two merchants made a company, and put in together 350 l. whereof A put in 150 l. and they have gained together 120 l. the queſtion is how much every one muſt have of the gaine.

Do as in the former, ſay if the whole ſtock gaine the whole gaine, what do 1 of the ſtocks.

350 . . 120 . . 150
7 360 3

Facit l 51 . 8. $6\frac{6}{7}$ for A.
and l 68 . 11. $5\frac{1}{7}$ for B.

(7.) Two merchants made a company, A put in 127 l. and B put in as oftentimes 5 l. as A put in 3 l. and they have gained together 100 l. the queſtion is how much every one muſt have of the gaine.

First conſider that the ſame proportion holds betweene the parts of any number as it doth in the whole number, and therefore I ſay, if 8. (becauſe the one putteth 5. the other 3. which being added together, make 8.) do gaine 100. what ſhall 3. facit A gaineth the remainder of B his gaine.

5
3

8 . . 103 . . 3
300

Facit l 37 . 10 . — for A.
and l 62 . 10 . — for B.

This queſtion is much like the latter, for if one put 7 l. the other doth 4 added together make 11, and therefore I ſay, if 11 put in 350. what doth 4 put in? facit ſo much and the other that remaines.

(8.) Two merchants made a company, and put in together 350 l. with which they have gained 113 l 17 ſh 9 d. whereof A muſt have as oftentimes 4 las B muſt have 7 l. the queſtion is how much every one put in the company.

4
7

11 . . 350 . . 4
1400

Facit l 127 . 5 . $5\frac{5}{11}$ A put in.
and l 222 . 14 . $6\frac{6}{11}$ B put in.

Seeing B muſt have more than A, hee muſt needs put in more, and therefore I ſubſtract away from the gaine which B muſt have more than A, and the remainder muſt bee juſt parted in two, which is 40 apeece, then ſay if the whole gaine come of 540. whereof come 40. facit A put in the remainder that B put in.

(9.) Two merchants made a company, and put in together 540 l. with which they have gained 90 l. whereof B muſt have 10 l more than A, the queſtion is how much money every one put in the company.

90 . . 540 . . 40
10 6

80 *Facit* A put in 240 l.
and B put in 300 l.

(10.) Two merchants made a company, and put in together 280 l. with which they have gained 50 l. whereof A muſt have both in capitall, and gaine 160 l. the queſtion is how much money every one put in the companie.

280
50

330 . . 280 . . 160
16

4480
1493 $\frac{1}{3}$

Facit A put in 135 $\frac{15}{33}$ l.
and B put in 144 $\frac{8}{33}$ l.

First adde the whole ſtocke and gaine together, and ſay, if the aggregat come of the whole ſtocke, what doth A his gaine come of the facit he put in but the remainder that B put in.

(11.) Two merchants made a company, and put in together 780 l. and they find to have gained together with 71 three l. of which gaine B muſt have 30 pounds more than A, the queſtion is how much money A put in the company.

3 . . 7 . . 30 *Facit* 70 l.
780

710

Facit A put in 1 355. — . —

Here you muſt conſider that if B muſt have 30 l more than A, hee put in ſuch a portion more than A as would gaine 30 l. and therefore I ſay, if 3 come of 7. whereof come 30. facit 70. which I ſubſtract from the whole ſtocke, remaines 710 whereof A put in 1.

(12.) Three merchants made a Company, and put in together 840 l. whereof A put in 200 l. B put in 250 l. and they have gained together 300 l. the queſtion is, how much C muſt have of the gaine.

200
250

840 . . 300 . .

840
450

390
11700
975

Facit 1 139. 5. 8 $\frac{4}{7}$

Firſt I adde A his ſtocke and B together, facit 450. which I ſubſtract from 840. remains 390. which was C his ſtocke, then I ſay, if the whole ſtocke gaine 300. what ſhall 390 gaines facit 1391 5ſh 11. 4 in working, whereof I cut off the cyphers of the firſt and third number, then I multiply the third number by 3. and add 2 cyphers, facit 11700. which I divide by 12 and 7 becauſe that 12 times 7 is 84.

(13.) Three merchants made a company, and put in together 700 l. and they find to have gained with every 7 l 3 l. of which gaine A must have 40 l lesse than B, and B must have 60 l lesse than C, the question is how much money C put in the company.

Here I consider that if 7 l gaine 3 l 700 l did gaine 300. then I set downe one under another how much A and B must have lesse than C. and I find it to be in all 600 l. which money I add to the gaine, and then I take the $\frac{1}{4}$ of it for C his gaines. Then I say, if 3 l come of 7 l. whereof come $153\frac{1}{3}$ facit of 357 l 11 sh $6.\frac{2}{3}$ d. and so much money C put in the stocke.

40
60
60
160

300
160
460

3 . . 7 . . $153\frac{1}{3}$

1073 . 6 . 8

Facit l 357 . 15 . $6\frac{2}{3}$

(14.) Three merchants made a company, A put in 140 l. and they have gained together 220 pound, whereof B must have so oftentimes 3 l as A must have 2 l. and C must have so oftentimes 4 l as B must have 3 l. the question is how much money B and C put in the company every one apart.

First I say, as 2 is to 3 so is 140 to B his stock, then say, as 3 is to 4. so is 210 to C his stock as in example: this question is altogether like the last.

2 . . 3 . . 140
70

Facit l 210 B put in.

3 . . 210 . . 4
70

Facit 280 l C put in.

(15.) Three merchants made a company, A put in 200 l. and they have gained together 165 l 13 sh 4 d. whereof B must have so oftentimes 5 l as A must have 4 l. and C must have so oftentimes 7 l

as

as A muſt have 5 l. the queſtion is how much B and C put in the company every one apart.

This queſtion is altogether like the laſt.

4 . . 5 . . 200

. 50

Facit B put in 1250 . — . —

(16.) Three merchants made a company, A put 200 pound, and they have gained together 200 l. whereof B muſt have 60 pound, and C muſt have of it ſo oftentimes 4 pound as A muſt have 3 l. the queſtion is how much money B and C put in the company every one apart.

First conſider that if C have as often times 4 as A hath 3. then C put in as oftentimes 4 l as A put in 3 l then ſay, if when A puts in 3. C doth put in 4. what doth C put in when A doth put in 200 l. facit 266 l 13 ſh 4 d. ſo you come to know the ſtock of A and C. and have gained 200 l. alſo B muſt have 60 l. of it: and here ever marke, that what portion ſoever a man takes out, that portion he putteth in, then I conſider that if B hath 60 l. of the 200. there doth remaine 140 to be divided between A and C in ſuch a proportion as 3 is to 4. which to do I add 3 and 4 together, facit 7. wherewith I divide 140. the quotus is 20. by this 20 firſt I multiply 3. the product is 60. then I multiply 4 by 20. the product is 80. but I perceive againe that A ſhould have 60 l of the gaine: then I conſider againe, if B have as much of the gaine as A, he muſt needs haue put in as much: then I ſay if 3 put in 200. what doth 3. facit 200 but this laſt worke needed not, for if A put in 200 and had 60, B having 60 too, muſt needs put in 200 alſo.

6 . 3 . . 4 . . 200

8 66. 13. 4

14 *Facit* l 266. 13. 4 C put in.

3 . . 200 . . 3

Facit B put in 200 l.

(17.) Three merchants made a company, A put in 300 pound, and they find to have gained together a certaine ſumme of money, whereof B and C together muſt have ſo oftentimes 10 pound as

A must have 3 pound, and C must have so often times 6 pound as B must have foure pound, the question is how much money B and C put in the company every one apart.

3 . . 300 . . 6
Facit C put in 600 l.
3 . . 300 . . 4
Facit B put in 400 l.

This question is very easie, for it makes mention of 3 partners that gaine a certaine summe of money, whereof A must have as often times 3 as B must have 4. and B must have nothing of 4. then C must have 6. now A put in 300 l. and I would know what the rest put in, saying if 3 put in 300 what doth 4. facit 400 for B. then if 4 put in 400. what doth 6 as in example.

(18.) Three merchants made a company, A put in 140 pound, B put in 350 pound, C put in 560 pound, and they have gained together a certaine summe of money, whereof C must have 240 l. the question is how much A and B must have of the gaine every one apart.

560 . . 240 . . 140
3 20
Facit A must have 60 l.
560 . . 240 . . 350
3 50
Facit B must have 150 l.

First cut off the cyphers from 560 and other from 240. then say how many times 8 in 56 7 times, how many times 8 in 24. three times, then say 7 in 7 once, remaines 1 for divider, then 7 in 140 20 times, then 3 times 20 is 60. and the like for the next work.

(19.) Three merchants made a company, A put in 160 pound, and they have gained together 300 l. whereof B must have 80 pound, and C 140 pound, the question is how much money B put in the company, and also how much C put in.

140
80
220

80 ... 160 .. 80
Facit B put in 160 l.

80 .. 160 .. 140
Facit C put in 280 l.

Alway remember every one muſt have according as he hath put in, then I conſider that if 300 being gaine, and B muſt have 80 of it, C 140 of it added together ſubſtract from 300. remaines 80 for A, then put in 160. then ſay, if 80 come of 160. whereof came 80 (which is B his gaine) facit 160. alſo if 80 come of 160, whereof came 140 (which is C his gaine) facit of 280.

(20.) Three merchants made a company, and put in together a certaine ſumme of money, with which they gaine, to ſay, with every 9 141. of of which gaine A muſt have the $\frac{1}{4}$ leſſe 20 l. B muſt have the $\frac{1}{4}$ and 40 l. C muſt have the $\frac{1}{4}$ and 80 l. the queſtion is, how much money they put in the company.

$\frac{1}{4}$ leſſe 20
$\frac{1}{4}$ & 20
$\frac{1}{4}$ & 80
$\frac{3}{4}$ & 20

$\frac{1}{4}$ .. 100 .. 1
4 .. 9 .. —
Facit 900 l.

First conſider that 1 had all the gain, one had the $\frac{1}{4}$ leſſe 20 the other $\frac{1}{4}$ and 40 the third $\frac{1}{4}$ and 80. ſo that if they had had but each $\frac{1}{4}$ there would have remained $\frac{1}{4}$ ſtill, but they had all, which was $\frac{3}{4}$ and 100 beſide, ſo that the 100 muſt needs be the other $\frac{1}{4}$ and therefore I ſay if $\frac{1}{4}$ be 100. what is 1. then I ſay if 4 l gaines come of 9 whereof came the facit of the firſt worke $\frac{1}{4}$ to worke this, you muſt firſt multiply 4 by $\frac{1}{4}$ facit 1 for divider, then multiply 100 by 9. facit 900 for divident.

(21.) Three merchants made a companie, and put in together a certaine ſumme of money, with which they gaine, to ſay, with every 5 121. wherof A and B together muſt have the $\frac{1}{2}$ and 20 l. B and C together the $\frac{1}{4}$ and 20 l. A and C together the $\frac{1}{2}$ leſſe 20 l. the queſtion is how much money they put in the company.

$\frac{1}{2}$ & 20
$\frac{3}{4}$ & 20
$\frac{1}{2}$ leſſe 20
$1\frac{3}{4}$ & 20

$\frac{1}{4}$ .. 20 .. 1
2 .. 5 .. —
Facit 200 l.

This queſtion is done directly like the laſt in all points: for firſt you muſt multiply the 1 by the 2 facit $\frac{2}{4}$ then multiply the 5 by the denominator 4. facit 20. and 20 times 20 is 400 which divide by 1 facit 100 l as in example.

(22.) Three

(22) Three merchants made a company, A put in 127 pound, B put in so oftentimes five pound as A put in three pound, C put in so oftentimes 6 l as B put in 5 l. and they have gained together 175 l. the question is how much every one must have of the gaine.

14 . . 175 . . 6
2 25 3

Facit 75 l C must have.

14 . . 175 . . 5
2 25
5

125

Facit $62\frac{1}{2}$ pound B must have.
and $37\frac{1}{2}$ pound A must have.

First having examined this question, I find that the merchants stocke were in proportion as followeth, for A his 3 l B put in 5 l and C 6 l. added together facit 14 have gained 175. I say if 14 have gained 175 what 6 l. facit 75 for C his part. To worke this first I take the $\frac{1}{2}$ of 14 and $\frac{1}{2}$ of 175. then I take $\frac{1}{2}$ of 2 facit 1 for divider, to ballance that I take $\frac{1}{2}$ of 6 facit 3. then multiply 25 by 3. then say if 14 gaine 175. what doth 5. facit $62.\frac{1}{2}$ to worke this first take $\frac{1}{2}$ of 14. facit 2 for divider, and $\frac{1}{2}$ of 175. facit 25. multiplied by 5 facit 125. divided by 2 facit $62.\frac{1}{2}$ and for A his portion which put in 3 l. take the $\frac{1}{2}$ of C his gaine which put in 6 as in example.

(23.) Three merchants made a company, and put in together 900 pound, with which they have gained 500 pound, whereof A and B together must have 60 pound more than C, and A and C must have together 140 pound more than B, the question is how much money every one put in the company.

500 500 (22)
60 140
440 360
500 . . 900 . . 220
44
Facit C put in 396 pound.
5 . . 9 . . 180
36
Facit B put in 324 pound.
and A put in 180 pound.

First set down the gaine which is 500. then substract that which A and B must have more than C. which is 60 l. remaines 440. remaines 220 for C his part of stock for it is understood that A and B must have as much as C. and 60 l beside. then say, if 500 gaine come of 900 stocke, whereof came 220 gaines facit 396 stocke, and the like for the rest of the question: to work it, first divide by the divider the third number, and multiply the quotus by the middle number of all the worke.

(24.) Three merchants made a company, and put in together 1000 l. with which they have gained together 400 l. of which A must have capitall and gaine 350 pound, and B must have capitall and gaine 525 pound, the question is how much money every one put in the company.

1000
400
1400 . . 1000 . . 350
2 5 50
Facit A put in 1 250.—.—
14 . . 10 . . 525
2 5 75
Facit B put in 1 375.—.—
and C put in 1 375.—.—

First set down the stocke and gaine, and say, if 1400 capitall and gaine come of 1000 stocke, whereof come 350 l stocke and gaine. To work this first cut off two cyphers from the first and middle number, then take 1/7 of 14 facit 2 and 1/7 of 350 facit 50. then take 1/2 of 2. facit 1 for divider, and 1/2 of 10. facit 5. then 5 times 50 is 250. and in like manner the other part of the question, facit 375. then add the 375 and 7250 together, and substract it from 1000. and the remainder is C his stock as in example.

(25.) Three

(25.) Three merchants made a company, and put in together 900 l. with which they have gained 400 l. whereof A and B together must have 100 pound more than C. and C must have so often times five pound as B must have foure pound, the question is how much money every one put in the company.

400 . . 900 . . 150
100 1350

300 *Facit* C put in l 337 . 10 .—
5 . . 4 . . 337 . 10 .—
67 . 10 .—

Facit B put in l 270 . — . —
and A put in l 292 . 10 .—

First take away the money that A and B must have more than C. remaines 300 to be divided, 1 $\frac{1}{3}$ for C. and the other 1 $\frac{1}{3}$ and 100 for A, then for B say, as 5 is to 4 so is C stocke to B stocke, then adde C and B stocke together, and substract from 900 and the remainder is A his stocke.

(26.) Three merchants made a company, and put in together 1200 pound, with which they have gained 700 pound, whereof C must have 80 pound more than B, and B must have 50 pound more than A, the question is how much money every one put in the company.

50 700
50 180

520

80
180 700 . . 1200 . . $173\frac{1}{3}$

2080

Facit A put in l 297 . 2 . $10\frac{3}{7}$

7 . . 12 . . $223\frac{1}{3}$

2680

Facit B put in l 382 . 17 . $1\frac{5}{7}$
and C put in l 520 . — . —

First add all their moneyes together that C and B muſt have of the gaine more than A, facit 180. then take 180 from 700 remains 520 to be divided by the 3. whereof A muſt have 1 which is $173\frac{1}{3}$ l. then ſay if 700 gaine come of 1200 ſtocke, whereof come $173\frac{1}{3}$ to worke it firſt cut off the two cyphers of the firſt and ſecond number, then multiply $173\frac{1}{3}$ by 12 ſayng thirds is 4 &c. and divide by 7. then for B add the 50 he had more than A to his $\frac{1}{3}$ of the ſtocke, facit $223\frac{1}{3}$ then ſay if 7 gaine come of 12 ſtocke, whereof gaine $223\frac{1}{3}$ gaine? multiply and divide as you did for A, and when you have found A and B ſtocke, add them together and ſubſtract them from the whole ſtocke, the remainder muſt needs be C his ſtocke, as in example.

(27.) Three merchants made a company, A put in 150 pound, B put in 210 pound, C put in 330 pound, and they have gained together 160 pound 17 ſhillings 9 pence, the queſtion is, how much every one muſt have of the gaine.

150 69 . . 160 . 17 . 9 . 15

210 23 5

330 6 . 19 . 10

690 220

454

221

Facit A must have l 34 . 19 , 6 3/23

69 . . 160 . 17 . 9 . . 21

23 6 . 19 . 10 19/23

Facit B must have l 48 . 19 . . 3 13/23

and C must have l 76 . 18 . 11 2/23

First set down all the summes of money under one another, and add them together, facit 690. then I cut off the cyphers and say if 69 gaine 160 l 17 sh 9 d. what doth 15. which is A his stock, having the cyphers cut off, to worke this, first he doth divide 160 l 17 sh 9 d by 23. facit 6 l 19 sh 10. 19/23 d. multiplied by 5 facit 34 l 9 sh 6. 3/23 d for A his part of the gaine, then for B say, if 69 gaine 160 l 17 sh 9 d. what doth 21. for this do as you did for A, take first the 1/3 of 69 facit 23. and the 1/3 of 21 is 7. here I should divide 160 l 17 sh 9 d by 23. but I know by the last work that the quotus is 6 l 19 10. 19/23 therfore I need not work it but set it down without working, and multiply it by 7 the 1/3 of 21. facit 48 l 19 sh 3 19/23 d for B. then add B his part and A his part together, and substract from the whole gaine, and the remainder is C his gaine.

(28.) Three merchants made a company, and put in together 1500 pound, with which they have gained a certaine summe of money, whereof B and C together must have so oftentimes 10 l as A must have three pound, B must have so oftentimes 4 l as C must have 5 l. the question is how much money every one put in the company.

10
3
13 . . 1500 . . 3
4500
Facit A put in 1 346 2/13
5
4
9 . . 1153 11/13 . . 4
4615 1/13
Facit B put in 1 512 12/13
and C put in 1 641 1/13

First consider that if B and C together must have so oftentimes 10 as A must have 3. they put in together as oftentimes 10 as A put in three and then the three put in all together —— therefore I say if 13 put in 1500. what doth 3 put in? multiply by 3 and divide by 13 facit A put in 346. 2/13 and B must have so oftentimes 4 as C hath 5. and therefore he puts in as oftentimes 4 as C put in 5: and they two put in all 5 save what A put in, which is 346. 2/13 wherefore substract A his stocke from the whole, and the remainder must be divider by B and C. wherefore say, if 9 put in 1155. 11/13 what doth 4 put in? multiply and divide, facit 512. 12/13 add this to A his stock, and substract it from the whole stocke. and the remainder is C his stock as in example. For the first worke multiply 1500 by 3 and divide the product by 13. For the latter multiplication 1153. 11/13 by 4. and divide the product by 9. then add A and B their two stocks together, and substract them from the whole stocke, and the remainder is C his stock as in example.

(29.) Three merchants made a company, A put in 1200 pound, B put in so oftentimes five pound as A put in foure pound, C put in so oftentimes seven pound as B put in six pound, and they have gained together 100 pound, the question is how much every one must have of the gaine.

5 . . 4 . . 6 *Facit* $4\frac{4}{17}$

$17\frac{4}{5}$ . . 100 . . $4\frac{4}{17}$

89 *Facit* $26\frac{6}{89}$ pound for A.

2400
626
8

89 . . 100 . . 30

Facit $33\frac{63}{89}$ pound for B.

3000
333
6

and $39\frac{29}{89}$ pound for C.

First say, If when B put in 5 l. A put in $4\frac{4}{17}$ l. what doth A put in when B put in 6, facit $4.1\frac{3}{5}$ so that A puts in $4.1\frac{3}{5}$ in proportion, and B put in 6 l. and C put in 7. all added together, facit 17.4 then say if 17.4 stocke gaine 100 what doth $4.4\frac{4}{17}$ facit 26.86 to worke this, first bring 17.4 into the fraction, facit 89 for divider, then bring $4.4\frac{4}{17}$ into the fraction, facit 14. then by 100 facit 1400 for divident, as in example. Then for B say, if 89 gaine 100 what doth 30 which is the product of 6 being brought into 60. then multiply 30 by 100 and divide by 89, facit 33.63 for B, then add A his gaine and B his gaine together, and substract the aggregat from the whole gaine, and the remainder is C his gaine.

(30.) Foure merchants made a company, A put in 85 pound 12 shillings, $7\frac{1}{2}$ pence, B put in 107 pound and $9\frac{1}{2}$ pence, C put in 128 pound 8 shillings $11\frac{1}{4}$ pence, D put in 192 pound, 13 shillings $4\frac{7}{8}$ pence, and they have gained together 213 pound 19 shillings $11\frac{1}{2}$ pence, the question is how much every one must have of the gaine.

85 . 12 . $7\frac{1}{2}$ 513 . 13 . 9 . . 213 . 19 . $11\frac{1}{4}$ . . 85 . 12 . $7\frac{1}{2}$
107 . —— . $9\frac{1}{8}$ *Facit* A must have 135 . 13 . $3\frac{7}{8}$
128 . 8 . $11\frac{1}{4}$ 513 . 13 . 9 . . 213 . 19 . $11\frac{1}{4}$ . . 107 . —— . $9\frac{1}{8}$
192 . 13 . $4\frac{7}{8}$ *Facit* B must have 144 . 11 . $7\frac{27}{32}$
513 . 13 . 9 . . 213 . 19 . $11\frac{1}{4}$ . . 128 . 8 . $11\frac{1}{4}$
Facit C must have 153 . 9 . $11\frac{13}{16}$
and D must have 180 . 4 . $11\frac{13}{32}$

This question is somwhat troublesome to be done according to Mastersons manner of doing, for he doth first add all their stocks together, saying if 513 l 15 sh 9 d. then say if 513 l 15 sh 9 d gaine the whole gaine, what doth 85 l 12 sh 7 $\frac{1}{2}$ d. which is one of the stocks, facit 35 l 13 sh 2 d. and thus wrought, first he considers 85 l 12 sh 7 $\frac{1}{2}$ d is the $\frac{1}{6}$ of 513 l 15 sh 9 d. and therefore he takes the $\frac{1}{6}$ part of 2431 l 19 sh 2 $\frac{1}{2}$ d which is the whole gaine, and in like manner all the rest, as in example.

(31.) Three merchants made a company, A put in 400 l 13 sh 8 d. B and C together put in so often times 12 l as A put in 5 l. C put in so often times 5 l as B put in 4 l. and they have gained together 200 l the question is how much every one must have of the gaine.

12 . . 5 . . 9 *Facit* $3\frac{1}{4}$
$12\frac{3}{4}$ . . 200 . . $3\frac{1}{4}$

51 *Facit* $58\frac{4}{17}$ l for A.

3000
452
4

First the proportion betweene A, B and C is thus, A put in 5. and B and C together put in 12. and after it appeares that for B his 4 l. C put in 5. which is 9 times, and therefore first I say if when B and C put in 12 l. A put in 5. what doth A put in when B and C put in 9 l. facit $3\frac{3}{4}$. so that the proportion is thus, A put in $3\frac{3}{4}$ B 4 and C 5. altogether facit 12. $\frac{3}{4}$ then say if 12 $\frac{3}{4}$ gaine 200. what shall $3\frac{3}{4}$ which is A his stocke, bring the first and third numbers into quarters, and multiply and divide and in like manner the next which is B his stocke, then consider that C his stocke is 1 $\frac{1}{4}$ part more of B his stocke, and therefore I take the 1 $\frac{1}{4}$ part more of B his stocke, which is 15 $\frac{25}{51}$ and added to B his stock, it makes C his stock, as in example.

51 . . 200 . . 16

Facit $62\frac{18}{51}$ pound for B

3200
148
3

$15\frac{37}{51}$

and $78\frac{13}{51}$ l for C.

(32.) Three merchants made a company, and put in together 1000 pound, with which they have gained 350 l. whereof A must have so oftentimes 4 l as B must have 5 l B must have so oftentimes 3 l as C must have 4 l. the question is, how much money every one put in the company.

3 . . 4 . . 5 *Facit* $6\frac{2}{3}$

$15\frac{2}{3}$ . . 1000 . . 4

47 *Facit* A put in $255\frac{17}{47}$ pound.

12000
655
21

47 . . 1000 . . 15

Facit B put in $319\frac{7}{47}$ pound.

000
937
4

$106\frac{18}{47}$

and C put in $425\frac{25}{47}$ pound.

First if when B put in 3 l. C put in 4 what doth C put in when B put in 5 l. facit $6\frac{2}{3}$ so that the proportion is thus, A put in 4. B 5 and C $6\frac{2}{3}$ all added together, facit $15\frac{2}{3}$ then if $15\frac{2}{3}$ put in 1000. what doth 4 put in which is A his part of the gaines thus wrought, first bring the first number into the fraction, facit 47. then carry the denominator to 4 facit 12 then by 100 facit 1200 for dividend, and then divide by your divider, then if 47 put in 1000 what did 15 which is B his part. the denominator brought to ir, and I need not set downe 15 below the lines, but onely the three cyphers, and divide by my divider, then for the third part which is C his flocke, I consider that his flocke which is $6\frac{2}{3}$ is more than B his flocke by 1 part, and therefore I take the third part of B his flocke, and adde it to B his flocke, which is $106\frac{18}{47}$ added to B his flocke, and it makes C his flocke.

QVESTIONS OF COMPANIE WITH TIME.

(1.)

TWo merchants made a company, A put in 400 l. for 6 moneths, B put in 500 l. for 8 moneths, and they have gained together 200 l. the question is how much every one must have of the gaine, without reckoning interest upon interest.

First multiply each mans stock by his time, *facit* 24 and 40 added toge. ther facit 64. then I say, if 64 gaine 200. what will 24. facit 75 for A. which substract from 200 l. the remainder B must have, as in example.

400 . . 6 . . 24
500 . . 8 . . 40

64 . . 200 . . 24
8 . . 25 . . 3

Facit A must have 75 l.
and B must have 125 l.

(2.) Two merchants made a company, and put in together 1900 pound, whereof A put in 400 pound for 16 moneths, B put in his money for 8 moneths, and they have gained together 400 l.

the question is how much every one must have of the gaine, without reckoning gaine upon gaines.

1900
400 . . 16 . . 8

1500 . . 8 . . 15

23 . . 400 . . 8

Facit A must have l 139 . 2 . 7 7/23 l 139 . 2 . 7 7/23
and B must have l 260 . 17 . 5 16/23

First set down the whole stocke, which is 1900. then I set downe A his 400 l under it for 16 moneths, which number I mukiply by the time, and leave out the cyphers: the remainder of the other put in, which is 1500. multiplied by his time, facit 15. leaving out the cyphers: also I say, if 23 being the two products added together, gaine 400, what doeth 8 facit 139 l 2 sh 7. 7/23 d for A, the remainder of the 400 for B as in example.

(3.) Two merchants made a company, A put in 168 l 13 sh 4 d for 6 moneths, B put in 421 l 13 sh 4 d for 12 moneths, and they have gained together a certaine summe of money, whereof A must have 30 l, the question is how much B must have of the gaine, and also how much they have gained per cento per anno, without reckoning interest upon interest.

168. 13. 4. . 6
421. 13. 4. . 12

42. 3. 4. . 30 . . 210. 16. 8

253 1265

Facit B muſt have 150 pound.

37950
226

84. 6. 8. . 30. . 100

253 *Facit* $35\frac{145}{253}$ per cento per anno.

9000
1425
14

Firſt ſet downe every mans ſtocke and time, which is 6 moneths and 12 moneths, now I do account the 6 to be one and the 12 to be two, then to leſſen the worke, I take the $\frac{1}{2}$ of A his ſtocke, facit 421 l 13 ſh 4 d for divider, then I ſhould multiply B his ſtocke by 2. but omitting that, it is divided by 2. and then I take the $\frac{1}{2}$ of it, and ſo I have the $\frac{1}{2}$ of B his ſtocke, all which is 220 l 16 ſh 8 d. then I bring A his ſtocke into ſixes, facit 253 for divider, the third number alſo into ſixes, facit 1265 multiplied by 30. and then divide, then conſider A which 126 l 13 ſh 4 d. doth gain 30 in 12 moneths, therfore take $\frac{1}{2}$ of A his ſtock, and ſay if 84 l 6 ſh 8 d gaine 30. what will 100. bring the money into thirds, and multiply 30 by 3. and then by 100. and ſo multiply and divide.

(4.) Two merchants made a company, A put in 400 pound for foure moneths, and then tooke out 150 pound, and remained with the reſt untill the yeares end: B put in 350 pound for 12 moneths, and they have gained together 200 pound, the queſtion is how much every one muſt have of the gaine, without reckning gaine upon gaine.

400 . . 4 . . 1600
150

250 . . 8 . . 2000

36

350 . . 12 . . 42

78 . . 200 . . 36

13 *Fac.* 192.6. $1\frac{11}{13}$ A must have.

120004

3421

78 . . 200 . . 42 81

Facit 1 107. 13. $10\frac{3}{13}$ B must have.

First multiply A his 400 l by his time, facit 1600 Then his 250 by 8 moneths, facit 2000. added together, facit 3600 but I leave out the two cyphers to shorten the worke. Then B put in 350 for 12 moneths, multiplied by his time facit 4200. but I cut off the cyphers, as of 3600. added together facit 7800. then say if 7800 gaine 200 what will 3600 gaine? To work it first cut off the two cyphers both of the first and last numbers, which should not indeed bee set downe, then take the $\frac{1}{6}$ of 78. facit 13 and $\frac{1}{6}$ of 36 facit 6. then 6 times 200 is 1200 for dividend, which divide by 13 facit 92 l 6 sh 1. $11\frac{1}{13}$ d for A his gaine, then say againe, if 78 gaine 200. what will 42 dos this latter part need not be wrought, but substract A his part from 200. and the remainder is B his stock, as in example.

(5.) Two merchants made a company, A put in 200 l for 4 moneths, and then putteth yet in 100 l. and 4 moneths after that taketh out 150 l. and with the rest he doth remaine untill the years end. B put in 400 l. and 5 moneths after that taketh out a certaine summe of mony, and with the rest he doth remain until the years end, then they find to have gained 200 l. wherof B must have so oftentimes 3 l as A must have 2 l. the question is how much money B tooke out of the company after the 5 moneths, without

without reckoning gaine upon gaine.

5 . . 200 . . 3 *Facit* 120
200 . . 4 . . 800
100

300 . . 4 . . 1200
150

150 . . 4 . . 600

80 . . 4600 . . 120
Facit 3900

400 . . 5 . . 2000

1900

271 3/7

Facit B tooke out 128 4/7 pound.

First he considers of the 200 l gaine B must have so oftentimes 3 l as A must have 1 l. and therefore he saith if 15 l gaine 200 l. what shall 3 pound gaine 120. so that A must have 80 and B 120 of the 200 l as in the first worke is manifest, then say what A put in, which is first 400 l and for 4 moneths being multiplied together, facit 800 l then having another 100 l put into it and multiplied by the time, facit 1200 then take away 150 remaines 150 l for 4 moneths, multiplied by his time facit 600. all the product being added together facit 2600 then I say, if 80(which is A his part of the gaine come of 2600 product, what shall 120 gaine come of, facit 3900. then hee cast what B his stocke which is 400 for 5 moneths, being multiplied together facit 2000. being substracted from 3900 (which is the iust number the product should be of) of B his stocke multiplied by his time, remaines 1900 which is the product of the money that B tooke out of his 400 l. and to know that I do divide the product 1900 by 7 the time which the money remained was in, for the quotus is 271. 3/7 then I substract this out of the 400 and the remainer is the summe that B tooke out, as in example.

And good reason it should be so, for 1900 being a product of a certaine summe being multiplied by 7 moneths, then divide that product by 7. the quotus is that that was multiplied before, which is 271. Now if 1900 come of that, the rest of the 400 was taken away, and therefore I substract that 271.3/7 from 400. and the remainder is the summe that B tooke out.

This question is altogether like the last, and no difference at all, and therefore it is not worth the noting, as in example.

(6.) Two merchants made a company, A put in 300 l for 2 moneths, and then putteth yet in 100 l. and 6 moneths after that taketh out 200 l. and with the rest remaineth untill the yeares end. B put in 100 l for one moneth, and then putteth yet in 700 l and 6 moneths after that taketh out a certaine summe of money, and with the rest remaineth untill the yeares end, and then find to have gained together 400 l. whereof B must have 80 l more than A, the question is how much money B tooke out of the company, without reckoning interest upon interest.

```
300 . . 2 . . 600          400
100                         80
---   ---   ----          ----
400 . . 6 . . 2400          320
200                         160
---   ---   ----
200 . . 4 . .  800
               ---
        160 . . 3800 . . 240
                19
                ----
                5700
100 . . 1 . .  100
700
---
800 . . 6 . . 4800   Facit B tooke out 640 l.
              ----
              4900
               800
               160
```

(7.) Two merchants made a company, A put in 100 l for 3 moneths, and then putteth yet in 200 l. and 4 moneths after that he taketh out 150 l. and with the rest he doth remaine untill the yeares end, B put in 800 l for 3 moneths, and then taketh out

200

200 l. and 5 moneths after that he taketh yet out 300 l. and with the reſt he doth remaine untill the years end, and then they find to have gained 500 l. the queſtion is, how much every one muſt have of the gaines, without reckoning gaine upon gaine.

First multiply each mans money by his time, facit 2250 for A 6600 for B. both added together 8850. then ſay if that gaine 500. which is the whole gain, what ſhall one of their ſtocks: the laſt rule thus wrought, firſt cut off a cypher from 8850. and other from 500. then take 1 of 885. facit $\frac{7}{7}$ 177 for divider, and 1 of 50. facit $\frac{7}{7}$ 10. ſo there remaines 2250. and 10 for divident, firſt I divide 2250 and below the quotus I prefix a cypher, as in the worke.

100 . . 3 . . 300
200

300 . . 4 . . 1200
150

150 . . 5 . . 750

2250
6600

8850 . . 500 . . 2250

177 *Facit* $127\frac{71}{177}$ l for A.

and $372\frac{72}{177}$ l for B

800 . . 3 . . 2400
200

600 . . 5 . . 3000
300

300 . . 4 . . 1200

6600

4860
X221

(8.) Three merchants made a company, A put in 400 l for 3 moneths, and then taketh out a certaine ſumme of money, and with the reſt remaineth untill the yeares end. B put in 200 l for 6 moneths, and then putteth yet in 100 l. and two moneths after that taketh out 50 l. and with the reſt remaineth untill the yeares end: C put in 100 l for 5 moneths, and then putteth yet in a certaine ſumme of money, and withall that remaineth untill the yeares end; and then they find to have gained together 500 l. whereof A muſt have 150 l. B muſt have 100 l. the queſtion is how much money A tooke out, and alſo how much C put in the laſt time, without reckoning gaine upon gaines.

200 . . 6 . . 1200
100

300 . . 2 . . 600 400 . . 3 . . 1200
50

250 . . 4 . . 1000 $333\frac{1}{3}$ . . 9 . . 3000

100 . . 2800 . . 150 *Facit* A tooke out $66\frac{2}{3}$ l.
14

Facit 4200 for A and 7000 for C

100 . . 5 . . 500
$928\frac{4}{7}$ . . 7 . . 6500
Facit C put in $828\frac{4}{7}$ l.

First I see what B his stocke multiplied by 6 his time, facit 2800. After I find that B had 100 gaine, and therefore I say, if 100 gaine come to 2800 product, of what product came 150 l. then I consider that 50 is the $\frac{1}{2}$ of 100. multiply then 100. and therefore it must come of a product that is bigger than 2800 by $\frac{1}{2}$ and therefore I take $\frac{1}{2}$ of 2800 which is 1400. and added together facit 4200 which is the product of A his stocke multiplied by his time. Now to know what money A tooke out. First see what he put in which is 400 for 3 moneths, facit 1200. this I substract from 4200 remaines 3000 which is the product of the remainder of the 400 l after that A had taken away what hee did and to know how much it was, I doe divide this 300 by 9 moneths, facit 333 $\frac{1}{3}$ which was that which was left in the former 9 moneths by substracting from 400 so that A tooke out 66. 2 l. now 500 l was the whole gaine, whereof A had 150 and B 100. and remained 250 for C. which is as much as both A and B had, and therefore the product of his money multiplied by his time must bee as much as both A and B his stocke, which is 700. Now I see what C put in which is 100 for 5 moneths, being multiplied facit 500. but should be 7000. therefore I substract 500 from 7000 remains 6500. which is the product of money that C put in, being multiplied by the time which is 7 moneths, and therefore to know his summe I do divide 6500 by 7. the quotus is $928.4\frac{4}{7}$ which is the summe was in 7 moneths, now 100 was in before, and therefore I substract 100 l from $928\frac{4}{7}$ and the remainder C put in after the 100. as in example.

(9.) Foure merchants made a company, A put in 200 l for 12 moneths, B put in 300 pound for 8 moneths, and then taketh out a certaine summe of money, and with the rest he remaineth untill the yeares end. C put in 100 l for 3 moneths, and then putteth yet in a certaine summe of money, and with

with all that he remaineth untill the yeares end. D put in a certaine ſumme of money for 4 moneths, and then putteth yet in 50 l. and with all that remaineth untill the yeares end, then they find to have gained together 500 l. whereof B muſt have 20 l more than A, C muſt have 30 l more than B, and D muſt have 60 l more than C, the queſtion is how much money B tooke out, how much C put in the laſt time, and alſo how much D put in the firſt time, without reckoning gaine upon gaines.

20 500 80 . . 2400 . . 100 *Facit* 3000
50 180 80 . . 2400 . . 130 *Facit* 3900
110 310 80 . . 2400 . . 190 *Facit* 5700
180

200 . . 12 . . 2400
300 . . 8 . . 2400 100 . . 3 . . 300
150 . . 4 . . 600 400 . . 9 . . 5700

Facit B tooke out 150 l. *Facit* C put in 400 l.

50 . . 8 . . 400
5300

Facit D put in 441 $\frac{2}{3}$ pound.

Firſt ſee what each man hath more than A of the gaines, facit B hath 20 l more than A. C hath 50 l and D hath 110. all added together, facit 180. which muſt be ſubſtracted from the 500 l. remaines 320 to be parted into foure equall parts which is 80 l apeece, then I ſeeke what each man put in, and I find that A his money multiplied by his time makes 2400 which is his ſtocke, then I ſay, if 80 gaine come of 2400 what ſhall 100 gaine come of, which is B his 80 and 20 more, facit of 3000. then I ſee what his ſtock was, & I find that B hath put 100 for 3 moneths, which makes 2400 but his gaine came of 3000 product, therfore I ſubſtract 2900 from 3000 remaines 600. which was the product of the reſt of the money after B had taken out ſome, and to know how much that was, I divide 600 by 4 which is their time that it was in, and I find that it came of 130. then all the reſt of 300 was taken away, which is 150. and in like manner the reſt, but remember that when you worke his gaine to find his ſtock, conſider that the unknowne part or ſumme was in for 12 moneths. and there I divide 5300 by 12. and I find that that 441 2 is the ſumme that D put in as in the firſt.

A QVESTION OF BUYING AND SELLING Wares of diverſe prices at one price.

A Merchant hath two peeces of camericke, content 13½ elles the peece, the beſt coſt 4 ſhillings the ell; and the other 3 ſhillings 4 pence the ell, the queſtion is whether he doth win or loſe, and how much per cento, when he doth ſell the ell one with another for three ſhillings 10 pence.

In this queſtion he takes the 1 of both the prices, and adds them together, facit 3 ſh 8 d. Then ſelling it for 3 ſh 10 d. hee gets 2 d in every 3 ſh 8 d. therefore I ſay, if 3 ſh 8 d. get 2 d. what ſhall 100. In working I bring the 3 ſh 8 d into pence, facit 32. by multiplying it by the 1 of 12. and therefore I multiply 100 by 12 of 2 which leaves it as it finds it, facit 100 ſtill which I divide by 2 and 22. becauſe two times 11 is 22.

2.—
1.8

3.8
3.10

3.8 . . —.2 . . 100

22 50

Facit he doth win 4 4/11 per cento.

QVESTIONS

QVESTIONS OF BVYING AND SELLING respecting Tare, Cloffe, and Trett.

(1.)

A Merchant doth buy a bagge of ginger, poiz 1 C 3 qr 7 L tara for the bag, 3 L 7 oz. for 21 l 3 ſh 8 d. the queſtion is for how much the pound was bought, when he is allowed 4 per cento for tret.

1 . 3 . 7
3 . 7

1 . 3 . 9 . . 21 . 3 . 8 . . 1

7 — 423 — 8
199 — 5084
3193
26 . 25

41509 *Facit* for 24 d the pound.

116800
780624
2 58

First ſubſtract the tare out of the groſſe weight, remaines 1 C 3 qr. 3 l 9 oz. the which brings into ounces, facit 3193 for divider, then bring the 21 l 3 ſh 8 d into pence, facit 5084. then hee ſhould multiply the latter number by 16. but inſtead thereof hee doth multiply it by the 1 of 16 which is 8. 1/2 do multiply the former divider 3193 by the 1 of 25. facit 41509 for divider, then he doth multiply 41509 by 8, facit 332072. hee doth multiply the 5084 by 1, 269. which is done by preſsing two cyphers, and multiplyed by 2. facit 116800 for divident, if it had been caſt up at the firſt working, the debitor would have paid more becauſe he had no trett allowed him, and therefore he ſaith, as 26 is 10 25. ſo is the facit of the firſt worke to the facit that is multiplyed by which the tret is allowed.

(2.) A merchant doth sell two bags of saffran; poiz 2 qr 5 L 13 ounces tara 14½ ounces, two quarters 9 L 12½ ounces tara 1 L 2¾ ounces at 14 sh 7 d the L. netto, the question is to how much they amount to in money in allowing 4 per cento for tret.

2. 5. 13 . . —. 14½ 104 . . 100 . . 4. 13. 8½
2. 9. 12½ . . 1. 2¼ 28
4. 15. 9½ 2. ¾ 125
1 . . 14. 7 . . 200875
1664 140612. 10. —
3347 18. 4
2510. 18. 9
Facit 188. — . 5 1125/1224
246472. 7. 1
233598 5
374
942
11

I set the weight of the two bags and set them together, facit 4 qr 15 l 9. 1 oz. add the tares together, facit 2 l 3 oz. 3/4 substract from the grosse weight, remaines 4 qr 13 l 8, 3/4 oz. for the third number, then I say, if 104 fall to 100. what will the third number fall to? To worke it, first I bring the third number into pounds and ounces, facit 2008 Then I should bring it into the fraction, but instead thereof I multiply the facit by 100 and set it in the place where the cyphers should be, saying, 100 halfes is 50. and 100 quarters is 25. facit 95 together, which I set where the two cyphers should have stood, then I bring the first number pounds into ounces, facit 16 in mind, multiplied by 104 facit 1664 for the first number: then I say, if 1664 cost 14 sh 7 d. what will 200875. First multiply this latter number by 14 sh. for say 14 times 5 is 70. set downe 10 sh and carie 3 l. then multiply the rest of the figures by the 1 of 14. and add to the 3 l. facit 140612 l 10 sh. then for 4 d take 1/20 of 200875. and for the 3 d the 1/300 of the former number, added all together, facit 1460472 l 7 sh 1 d. divided by 1664 facit 188—5. 1125 d as in example.
1224

(3.) A

(3.) A merchant doth ſell three bags of pepper, poiz two hundred three quarters $4\frac{1}{2}$ L tara $2\frac{1}{4}$ L. two hundred three quarters $2\frac{1}{4}$ L. tara $2\frac{1}{8}$ L. two hundred one quarter $6\frac{1}{8}$ L tara $2\frac{1}{4}$ L at two ſh 1 1 d the pound netto, the queſtion is to how much they do amount to in money, when he muſt allow 4 per cento for tret.

2. 3. $4\frac{1}{2}$ . . $2\frac{1}{4}$	104 . . 100 . . 7. 3. $6\frac{1}{4}$
2. 3. $2\frac{1}{4}$ . . $2\frac{1}{8}$	26 31
2. 1. $6\frac{1}{8}$ . . $2\frac{1}{4}$	1 . . 2. 11 . . 874. 15
7. 3. $13\frac{5}{8}$ $6\frac{7}{8}$	87. 9. 6
	29. 3. 2
	10. 18. $8\frac{1}{4}$
	4 . 18. 1
Facit l 122. 13. $2\frac{71}{104}$	127. 11. $4\frac{1}{2}$
	43240
	27374
	257

First ſet downe your 3 bags of pepper, being added together, facit 7 C 3 qr $13\frac{5}{8}$ l the tare, likewiſe being added together facit 6. 7 l. being ſubſtracted remaines 7 C 3 qr $6\frac{3}{4}$ l. then ſay if 104 fall to 100. what ſhall 7 C 3 qr $6\frac{3}{4}$ l fall to? Bring it into quarters, facit 31. then into pounds, facit 874. then ſay if 1 L coſt 2 ſh 11 d. what doth 874 $\frac{3}{4}$? For this I place 874 l 15 ſh ſuppoſing it at 20 ſh the pound. Then for 2 ſh take the $\frac{1}{10}$ facit 87 l 9 ſh 6 d. then for 8 d the $\frac{1}{2}$ of that, and for 3 d the $\frac{1}{8}$ of the quotus of 2 ſh. facit 10 l 17 ſh $8\frac{1}{2}$ d. all added together facit 127 l 11 ſh $4\frac{1}{2}$ d. which divide by 26 never medling with 104 nor 100. but conſidering we are to take away the $\frac{1}{26}$ part, and therefore I divide by 26, facit 4 l 18 ſh 1 d. which I ſubſtract from 1207 l 21 ſh $\frac{4}{4}$ d remaines 122 l 13 ſh 2. $\frac{47}{104}$ d as in example.

QVESTIONS

QVESTIONS OF INTEREST WITHOVT *Intereſt upon Intereſt.*

(1.)

Here I ſhould multiply by 10. and divide by 100 but I conſider that I may cut off a cypher both from the multiplyers and divider, and ſo my multiplyer is 1. and divider 10. which I do but cut off the laſt figures with a line downe right, as in example.

A Merchant doth deliver 734 pound 6 ſhillings 8. pence at intereſt at 10 per cento per anno, the queſtion is how much he muſt receive for intereſt at the yeares end. Anſwer. Such reaſon as 100 hath to 10. ſuch reaſon muſt 134 pound 6 ſhillings 8 pence have to his intereſt.

100 . 10 . { l. 73 | 4 . 6 . 8
Facit { ſh. 8 | 6
{ d. 8 | 0

(2.) A merchant doth deliver money at intereſt at 7 per cento per anno, without reckning intereſt upon intereſt, the queſtion is for how long time he muſt deliver it to gaine as much as he doth deliver. Anſwer. Such reaſon as 7 hath to 100, ſuch reaſon muſt

muſt one yeare have to the time for the which he muſt deliver it.

7 . . 1 . . 100

Facit for $14\frac{3}{7}$ yeares.

This queſtion and the like is done onely by dividing the third number 100 by 7 the firſt number, and this queſtion doth hold for demonſtration how to do infinite queſtions of this kind, as if you add 30 and received 150, then you received 3 times as much, then you may ſay, if 7 come in one yeare, in what time doth 300 come, and that will anſwer your queſtion: or if you add 3 l 6 ſh 8 d. and at the end of time you receive 6 l 13 ſh 4 d then you receive twice as much as 7 per cento, then place your queſtion thus, ſaying if 7 come in 1 yeare, in how many yeares commeth 100. for you muſt ſuppoſe you had put out 100. becauſe 7 l is the intereſt of 100 l. for if you received 20 l for 20 l. you received 100 for 100. but if you cannot eaſily find the reaſon by the money put out & the mony received, then ſubſtract your mony put out from your money received, and the remainder is intereſt, then ſay, if 100 doth yeeld 70. 8 or 9 or 10. or whatſoever you put it forth for, what doth your principall? then you ſhall find what it doth yeeld in one yeare, then you may ſay, if that facit come in one yeare, in how many yeares doth the remainder come, which is the whole intereſt, and the facit doth ſhew, but this is when you doe know how many times you have received your principall.

(3.) A merchant doth deliver money at intereſt for 9 yeares without reckoning intereſt upon intereſt, the queſtion is, at what price it was delivered per cento per anno, when he doth receive for capitall and intereſt twice ſo much as he did deliver. Anſwer. Such reaſon as 9 yeares hath to one yeare, ſuch reaſon muſt 100 have to the price that it was delivered per cento per anno.

9 . . 100 . . 1

Facit at $11\frac{1}{9}$ per cento per anno.

Firſt conſider if that hee receive twice, he receives 10 l for 10 l. and 20 for 20. 100 for 100. ſo that if you have put forth any ſumme and received double your money, ſuppoſe you had put forth 100 l and received 200 which is twice as much, viz. your 100 l principall and 100 l intereſt, then you may ſay if 9 yeeld 100 what doth one yeare, and this facit doth ſhew how and at what rate your money was put forth when you received double at the yeares end.

(4.) A merchant delivered money at intereſt for one yeare at 8 per cento, and at the yeares end he received for capitall and intereſt 700 l. the queſtion is, how much money he did deliver at intereſt.

108 . 100 . . 700

5833 . 6 . 8

Facit 1648 . 2 . $11\frac{1}{9}$

Firſt ſuppoſe you ſee two cyphers prefixed before 700 and then it is is multiplied by 100 the divider, the product by 7c 000 by 12 and 9. becauſe 9 times 12 is 107.

Here because the paiments are all one and alike, I may instead of the debt place 1. and therefore instead of 6 times 72 one under another, I place both unites, then write all them and their time, and because that I doth neither multiply nor divide, I add up all the bad debts, facit 6. then all the time, facit 21. this 21 I divide by 6. facit $3\frac{1}{2}$ which is the common time: then say, if 1 yeare yeeld 12. what will $3\frac{1}{2}$ facit 42. then say if 242 come of 100. what will 432.

(5.) A merchant doth owe 432 l to be paid 72 l at 1 yeare, 72 l at 2 yeares, 72 l at 3 yeares, 72 l at 4 yeares, 72 l at 5 yeares, and 72 l at 6 yeares, and he doth agree with his creditor to pay him content all at one paiment in abating 12 per cento per anno for interest, the question is how much he must pay him in ready money, without interest upon interest.

1 . 1
1 . 2
1 . 3
1 . 4
1 . 5
1 . 6

6 . 21

$3\frac{1}{2}$ yeares.

1 . . 12 . . $3\frac{1}{2}$ *Facit* 42
142 . . 100 . . 432

71 *Facit* $304\frac{8}{71}$ l

2X600
316

First consider that if 12 gaine 12. 9 makes 9. then prefix two cyphers before 87. and divide it by 9.

(6.) A merchant doth deliver money at interest for 9 moneths after the rate of 12 per cento per anno without reckoning interest upon interest, and at 9 moneths end he doth receive for interest 87 l. the question is how much money he did deliver at interest.

12 . . 12 . . 9
9 . . 100 . . 87

Facit 1966 . 13 . 4

First multiply the two first numbers together for dividers, and the 3 last for divident, as in example.

(7.) If 13 gaine in 7 moneths 3 what shall 27 l gaine in 9 moneths, without reckoning gaine upon gaine.

13 . . 3 . . 27
7 . . — . . 9

91 729

Facit $8\frac{1}{91}$ pound.

(8.) A

(8.) A merchant doth deliver 150 pound at intereſt for 4 moneths at 9 per cento per anno without reckoning intereſt upon intereſt, the queſtion is how much he muſt receive at the foure moneths end capitall and intereſt.

12 . . 9 . . 4 *Facit* 3
100. . 103 . . 150
51 . 10
Facit 154 . 10. —

This queſtion is but one rule of 3. viz the laſt. If 100 103 150. conſider that 150 is as much as the firſt, and ½ as much more, and therefore muſt have as much for intereſt, and ½ more.

(9.) A merchant doth deliver 140 pound at intereſt for 3 yeares at 7 per cento per anno, the queſtion is how much he muſt receive at the 3 yeares end, without reckoning intereſt upon intereſt.

1 . . 7 . . 3 *Facit* 21
100. . 21 . . 140
4 . 4 29 . 8
Facit 169 . 8. —

This queſtion is but one rule of 3 as the laſt was, I conſider that the laſt number is ½ greater than the firſt, and therefore muſt have as much intereſt as the firſt, and ½ part more, and therefore I take ½ of 21 facit 4 l 4 ſh being doubled and added to the 21. facit 29 l 8 ſh. as in example.

(10.) A merchant doth take up 420 pound at intereſt for foure yeare and 8 moneths, and then to repay for it 600 pound, the queſtion is after what rate it was taken up per cento per anno, without reckoning intereſt upon intereſt.

600
420

420 . . 180 . . 100
4.8. . —— . . 12

196 *Facit* at $9\frac{2}{10}$ per cento per anno.

1800
36

First ſubſtract 420 from 600. and the remainder ſhewes the intereſt, then ſay, if 240 yeeld 180 for intereſt, what doth 100. then ſay, if 4 years and 8 moneths make that facit, what will twelve moneths make? to work it, firſt cut off the cyphers from 420 and from 180. then bring the 4 yeares 8 moneths into $\frac{1}{3}$ parts, accounting 8 moneths to be 2 of 2 yeare, facit 14. then I ſhould carry the denominator 3 to be divided, but inſtead thereof I divide 42 by it, facit 14. then 14 times 14 is 196 for divider, then 12 moneths I do account for one yeare, there remains 100 to be multiplied by 18 for divident, as in example.

(11.) A merchant doth take up 133 l 6 ſh 8 d at intereſt for 8 moneths, and at 8 moneths end he muſt pay for it 144 l. the queſtion is, after what rate it was taken up per cento per anno, without reckoning intereſt upon intereſt.

144. — . —
133. 6. 8

133. 6. 8 . . 10. 13. 4 . . 100
8 . . ———— . . 12

$266\frac{2}{3}$ 32 96

800 *Facit* at 12 per cent. per an.

First take the $\frac{1}{4}$ of 8 and 12. then multiply 133 l 6 ſh 8 d by 2 the $\frac{1}{4}$ of 8 accounting 6 ſh 8 d for $\frac{1}{3}$ of 1 l. then bring it into the fraction, facit 800 for divider, then multiply the 10 l 13 ſh 4 d by 3 the $\frac{1}{4}$ of 12 accounting 13 ſh 4 d the 1 l. ſaying 3 times 10 is 30. and 2 is 32. then multiply this 32 by 3 the denominator of 13 ſh 4 d. facit 46. this ſhould be multiplied by 100. but inſtead thereof I cut off two cyphers from 800. and divide 96 by 8.

(12.) A

(12.) If 450 l gaine in 4 moneths 30 l. in how long time ſhall 135 l gaine 17 l without reckoning gaine upon gaine.

First ſay, if 30 l be gotten in foure moneths, in how long time is 17 l got? then becauſe 135 muſt gaine it, which is leſſe than 450. it muſt needs be in longer time, therefore ſay, as 135 is to 450. ſo muſt the facit bee to the unknowne fourth number of the firſt worke.

30 . . 4 . . 17
135 . . — . . 450

405 | 765
81 | 3060
9 | 612
| 68

Facit in $7\frac{1}{5}$ moneths.

(13.) A merchant doth deliver money at intereſt for 7 yeares and 5 moneths, at 6 per cento per anno, without reckoning intereſt upon intereſt, and at the end of the ſaid time he doth receive for capitall and intereſt 987 l 11 ſh 8 d. the queſtion is how much he did deliver at intereſt.

This queſtion conſiſteth of the laſt worke, viz. if $144\frac{1}{3}$ come of 100 wherof come 987 l 11 ſh 8 d. firſt conſider that 11 ſh 8 d is $\frac{7}{12}$ l. and therefore I multiply 987 by 12. and adde in 7. facit 11852 then prefix a cypher for to multiply it by 100 facit 1185100 for divident, then bring the denominator 12 to the firſt number, ſaying, 12. 1 is 6. then 12 times 4 is 48. and 6 is 54 for divider, facit 1734. wherewith you muſt divide 1185100.

1 . . 6 . . 7 . 5 *Facit* $44\frac{1}{3}$
$144\frac{1}{3}$ . . 100 . . 987 . 11 . 8

1734 *Facit* $683\frac{389}{867}$ pound.

1185100
44788
597
7

QVESTIONS OF INTEREST UPON INTEREST.

* * *

(1.)

First the 4 cyphers of the diviſor ballance the 4 cyphers of the divident, remaines 1 for divider, and 11 and 11 and 2 for divident.

A Merchant doth deliver 200 l at intereſt for two yeares at 10 per cento per anno, and every yeare intereſt upon intereſt, the queſtion is how much he muſt receive at the two yeares end, both in capitall and intereſt.

100 . . 110 . . 200

100 . . 110 . . ---

Facit l 242 . --- . ---

(2.) A merchant doth owe 600 pound to be paid in three yeares, to ſay every yeare 200 pound, and he doth agree with his creditor to pay him altogether at the three yeares end, in allowing eight per cento per anno for intereſt, and every yeare intereſt

tereſt upon intereſt, the queſtion is how much he muſt pay at the three yeares end.

100 . . 108 . . 200
100 . . 108 . . ----

11664
11664
216
200

Facit { l 1649 | 28
sh 5 | 60
d 7 | 20

Here conſider that the debitor ſhould pay 200 l at 1 yeare, and 200 l at 2 yeares, and 200 l at 3 yeares end. But he doth agree to pay it at 3 yeares end, allowing 8 per cento intereſt upon intereſt, firſt caſt up what 200 l comes to at the end of 3 yeares, for none is due till 1 yeare is paſt. Thus wrought, firſt multiply 108 by 108, facit 11664 which ſhould be multiplied by 2 of 200. the cyphers being cut off, and of 100 to ballance it, but inſtead thereof I ſet downe all, then I ſhould divide it by 100 which is done by cutting off two cyphers, which I ſuppoſe to be done and that there remaines twice 116 one under another, all this is for the 200 l which was due at the firſt yeare end, till the end of the time which is 2 yeares, then at the end of the ſecond yeare there is due 200 more, which at the end of the third yeare makes 216. which I ſet downe under 116. ſo you have 200 l. remaines 1 more due at the end of 3 yeares, which muſt have no intereſt, becauſe that it was not due till then, and therefore ſet downe 200. all added together, facit 64928. divided by 100 facit 649 l 5 sh 7. 1 d.

(3.) A merchant doth deliver 300 pound at intereſt for 16 moneths at 3 per cento for foure moneths, and every foure moneths intereſt upon intereſt, the queſtion is how much he muſt receive at the 16 moneths end both capitall and intereſt.

First say if 100 be 103 what is 300. meaning at the end of the first 4 moneths, then againe, if 100 bee 103. what is the facit of the first worke, and so you may do for foure workes, but because it will bee held to multiply your divident time, therefore he doth multiply the as he doth go, as for example, first for the first two rules, the two cyphers of one of the

100 . . 103 . . 300
100 . . 103 . . ——
10609
100 . . 103 . . ——
1092727
100 . . 103 . . ——
112550881

Facit l 337|652643
sh 13|052860
d —|634320

100 doth ballance the two cyphers of 300. remaines 100 for divident, of the first two rules 103 and 103. and 3 there remains of 300 for divident, now I multiply 103 by 103. facit 10609 and by 3 the last, multiply them for the third and fourth money, say as before, if 100 be 103. what is the facit of the first 2 rules, then multiply 10609 by 103. and say for the latter 4 moneths, and last by 3. the remainder of 300 in the first rule: then consider that the first 100 did ballance the 2 cyphers of 300. againe, the other cyphers being added together, facit 6 cyphers for divident, and therefore I cut off 6 figures of my divident, and multiply my remainder by 20 and 12. as in other works.

(4.) A merchant hath owing 1000 pound to be paid at the end of three yeares, and he doth agree with his debter to pay him every yeare one part, and he to allow him 10 per cento per anno for interest, and every yeare interest upon interest, the question is how much every paiment must be, when one paiment must be as much as the other.

10 . . 11 . . 100 *Facit* 110

110

10 . . 11 . . 210

Facit 231

100

331

331 . . 100 . . 1000

Facit 1302.2.3$\frac{133}{331}$

70006
3883
767
298
1

First I ſhew what 100 l comes to intereſt upon intereſt, and I find it comes to at the end of 2 yeares 231. and then add to the other 100 l. which is due at the laſt yeares end, facit 331. then I ſay if 331 come of 100 l paid at time, whereof comes 1000. facit of 302–2–3 &c.

(5.) A merchant doth deliver money at intereſt for 3 years at 6 per cento per anno, and every yeare intereſt upon intereſt, and at 3 yeares end he doth receive for capitall and intereſt 1000 l. the queſtion is how much he did deliver at intereſt.

106 . . 100 . . 1000

106 . . 100 . . ——

11236

106 . . 100 . . ——

1191016 *Facit* l 839.9.$\frac{388592}{1191016}$

2000000000
472872760
228567722
28377557
2752731
3325
99

Here the deliverer of the money received at three yeares end 1000 l. & therfore I muſt make 3 workings of it, ſaying, if 106 come of 100. whereof come 1000. it came of ſomewhat, & therefore I leave a blanck and ſay againe, if 106 come of 100. of what came that blanck that I multiplied my 2 dividers together, facit 11236 then for the three yeares I ſay, if 106 come of 100. whereof come the facit of the laſt worke, then have you an unite 901 ſh for divident, and 11236 multiplied by 106 for your divider, and ſo hee did deliver 839—9 viz. 388592 d. 1191016

A

(6.) A merchant doth owe 800 l to be paid in 4 yeares, to ſay every yeare 200 l. and he doth agree with his creditor to pay him content, in rebating 10 per cento per anno for intereſt and every yeare intereſt upon intereſt, the queſtion is how much he muſt pay content.

11 . . 10 . . 200
2200

11 . . 10 . . 4200

121 24200

11 . . 10 . . 66200

1331 266200

11 . . 10 . .

14641 *Facit* 1633 . 19 . 5 $\frac{7927}{14641}$

9282000 x
1274777
581443
142932
28456
13871
619
.87

First I ſay if 11 fall to 10. what ſhall 200 fall to? now I ſhould multiply by 10 and divide by 11. but I ſuppoſe the 200 to have a cypher prefixed, but I omit dividing by it, then I ſhould add 200 l for the next yeare, but at the end of the fourth yeare hee ſhould pay 200 which being multiplied by 10 facit 2000. but I omit dividing by 11. and add 200 more to it, which was due at the end of 3 yeares, and be brought into 11th parts, facit 2200. added to the former 2000 facit 4200. then I ſay if 11 fall to 10. what ſhall 4200 for ſo I muſt apprehend it, then I ſhould carry the denominator 11 to the divider, and being multiplied together, facit 121 for divider, then I ſhould multiply 4200 by 10 in my mind, againe I ſee a cypher prefixed to it, and doe not divide it, but doe add 200 l which is due at the 2 yeares end being brought into 121 parts, facit 24200. added to the other facit 66200 then ſay I, if 11 fall to 10. what ſhall 66200. this I ſhould divide by 10. which I ſee a cypher prefixed and do add 200 l which is due at the end of the firſt yeare, which being brought into 1331 part, for that is divider, now being the product of 121 multiplied by 11. facit 266200 added to the other, facit 9282000 for divident 1331. multiplied by 11 facit 14641 for divider, ſo you perceive that in theſe 4 rules of 3 there is no diviſion, till the laſt, but ſtil the money added to it brought into the denominator of the divider.

(7.) A

(7.) A doth owe 1000 l to bee paid in five yeares, to ſay every yeare 200 l. and he doth agree with his creditor to pay him all in 3 yeare, to ſay every yeare one paiment, in allowing each other ten per cento per anno for intereſt, and every yeare intereſt upon intereſt, the queſtion is how much he muſt pay every yeare that one paiment may be as much as another.

First whereas A ſhould have paid 200 at the end of every yeare for 5 yeares together, which would bee 1000 l. A doth make a new bargaine, and doth pay all at the end of 3 yeares, and muſt allow B intereſt upon intereſt for ſo much money as ſhall grow due by the end of 3 yeares, & B muſt abate intereſt upon intereſt for 200 l for 2 yeares at 10 per cento, which hee doth receive ſooner than he ſhould do. And firſt I conſider that 200 l is due at the end of the firſt yeare, then I ſay, if 10 make 11. what doth 200. facit 220 at the end of the ſecond yeare, then another paiment

10 . . 11 . . 200 11 . . 10 . . 200

220 2200

10 . . 11 . . 420 11 . . 10 . . 42000

Facit 462 l. 3818.2.

547 $\frac{13}{121}$ *Facit* 347 $\frac{13}{121}$ l.

200

331 . . 100 . . 1009 $\frac{13}{121}$

3641

40051 *Facit* 304 $\frac{14996}{40051}$ l.

2221200

294996

3 6

I due, which is 200. added to 220 facit 420. I ſay if 10 make 11. what doth 420. facit 462 at the end of 3 yeares, then the laſt paiment ſhould be added to, which is 200 without any intereſt, but M. Maſterton doth rather add it to the other, which is for the fourth and fift yeare, where B doth abate 10 per cento for 200 due at 4 yeares end, and 200 due at 5 years end, and then ſay for the 200 due at 5 yeares end, if 11 make 10. what ſhall 200 I ſuppoſe I ſee a cypher prefixed before 10. and then it is 2000. then I add the 200 which is due at 2 yeares end, and becauſe I do divide by 11. I bring the 200 into 11 parts, facit 2200 added to the other facit 4200. then I ſay, if 11 make 10. what doth 420. whereupon prefix another cypher, facit 4200 for divident, and my divider is 11 and 11. which if I ſhould multiply together, would bee 121. but I rather divide by 11 two times, facit 347. $\frac{13}{121}$ whereupon I adde the 200 due at the 3 yeares end, without intereſt, facit 549. $\frac{13}{121}$ added to the former facit 1000 $\frac{13}{121}$ then I ſay if 331 come of 100 at a time paines, wherof come 1009 $\frac{13}{121}$ facit 34696 $\frac{13}{121}$ $\frac{14996}{40051}$ thus wrought, firſt carry the denominator 121 to the firſt number, which denominator conſiſteth of 2 times 11. and therefore I multiply my firſt number firſt by 2 times 11. facit 40051 for divider, then I reduce the third number into the fraction, then to prefix 2 cyphers for 100. facit 12 . 102100 for divident.

This question is easie, multiply the middle number as you go, as in example, then you have for your divider 1000000, whereof the 3 cyphers of the 1000 doth ballance 3 of them, and for the other 3 I cut off 3 figures of the dividend.

(8.) A merchant doth deliver a thousand pound at interest for six yeares, at 10 per cento per anno, and every yeare interest upon interest, the question is how much he must receive at the six yeares end both capitall and interest.

10 . . 11 . . 1000
10 . . 11 . . ——
121
10 . . 11 . . ——
1331
10 . . 11 . . ——
14641
10 . . 11 . . ——
161051
10 . . 11 . . ——

it l 1771|561
sh 11|220
d 2|640

(9.) A

(9.) A merchant doth owe 1200 l to be paid in 6 yeares, to ſay every yeare 200 l. and he doth agree with his creditor to pay him altogether at the end of 3 yeares, allowing each other 10 per cento per anno for intereſt, and every yeare intereſt upon intereſt, the queſtion is how much he muſt pay at the three yeares end.

10 . . 11 . . 200

Facit 220

200

10 . . 11 . . 420

Facit 462

200

$497\frac{499}{1331}$

Facit $1159\frac{499}{1331}$ pound

11 . . 10 . . 200

2200

11 . . 10 . . 4200

121

24200

11 . . 10 . . 66200

60181.9

5471

$497\frac{499}{1331}$

For direction to do this queſtion obſerve the ſeventh queſtion, and there are directions ſufficient for this.

(10.) A merchant doth owe a thouſand pound content, and he doth agree with his creditor to pay him every two yeares 400 l untill all be paid, allowing 8 per cento per anno for intereſt, and every yeare intereſt upon intereſt, the queſtion is how long time it ſhalbe untill all be paid, and how much the laſt paiment ſhalbe.

First cast up your 1000 l for 2 yeares together, first multiply 108 by 108. and divide 10000. but because my divider is one cypher more than my multiplyer, I do substract the 400. beginning at the second figure from the right hand, because my divider is a cypher more than 1000. then I multiply againe as before for 2 yeares together, and substract the 400 againe as before, beginning so many places from the right hand, also there are cyphers in my dividers more than in the 100. and in like manner unto the end the last product by 16 figures, and my divider by 13 figures, and then multiply by 3 and 12. facit 12518 sh 5 d.

100 . . 108 . . 1000
100 . . 108 . . ------
11664
400
7664
100 . . 108 . . ------
827712
100 . . 108 . . ------
89392896
400
49392896
100 . . 108 . . ------
5334432768
100 . . 108 . . ------
576118738944
400
176118738944
100 . . 108 . . ------
19020823805952
100 . . 108 . . ------

Facit { l 205|4248971042816
sh 8|497
d 5|975

Facit in 8 yeares, and the last paiment shalbe 205 l 8 sh 5 d. &c.

(11) A merchant hath owing 10000 l to be paid in 5 years, to ſay every yeare 2000 l. and he doth agree with his debter to pay him 5000 l content, and the reſt within 3 years, every yeare one paiment, allowing each other 10 per cen. per an. for intereſt, and every yeare intereſt upon intereſt, the queſtion is how much he muſt pay every year, that one paiment may be as much as another

10 . . 11 . . 2000 11 . . 10 . . 2000
2200 22000

10 . . 11 . . 4200 11 . . 10 . . 420000

4620 38181.9
2000 3471 $\frac{9}{121}$
6620 10 . . 11 . . 5000
6655 10 . . 11 . . ----
35 121

331 . . 100 . . 3436 $\frac{9}{121}$ 10 . . 11 . . ----

3641 37796 6655
40051 *Facit* 1038 $\frac{356}{40051}$ l every yeare.

41576500
325972
356

Firſt ſee what the 1000 l yearely at 10 per cento doth amount unto at the end of 3 yeares, that is to have intereſt for 2 yeares and 3 1000 without being due at 3 yeares end, facit 6620 then caſt up what his 5000 which he doth pay content doth amount unto at the end of 3 years, facit 6655 which was more than the debitor was due to have by 35 at the end of 3 yeares, then diſcount for the money due after the 3 yeares, and ſay, if 11 come to 10. what ſhall 2000. multiply by 10 facit 20000. but I omit dividing by 11 as in the former queſtion, but do bring the 2000 l for the 4 yeares into 11 parts, facit 22000. added to the other facit 42000 being multiplied by 10. which number divide by 11 two times, becauſe your dividers are two 11. facit 3471. $\frac{9}{121}$ from this ſubſtract 35 which the debitor was due to have, reſt 3436. $\frac{9}{121}$ which the debitor oweth at 3 years end, & then I ſay, if 331 as in the former queſtion come of 100 at a paiment, whereof come 3436. $\frac{9}{121}$ to worke this, firſt conſider that the denominator conſiſteth of two 11. and therfore firſt I multiply 3436 by 11. facit 37796. againe by 11 and add in 9 the numerator. facit 41576500 being multiplied by 100 for dividend, then multiply 331 by 11 two times, which is the part of the denominator 121. facit 40051 for diviſor, as in example

(12.) A merchant doth give me 100 l. conditionally that I ſhall pay him for the ſame 32 l a yeare for 5 yeares next following, the queſtion is whether I doe allow him by that bargaine under or above 16 per cento per anno for intereſt, and every yeare intereſt upon intereſt.

100 . . 116 . . 100

100 . . 116 . . ----

13456

100 . . 116 . . ----

1560896

100 . . 116

181063936

100 . . 116

210|03416576

100 . . 116 . . 32

3712

32

100 . . 116 . . 6912

801792

32

100 . . 116 . . 1121792

130127872

32

100 . . 116 . . 162127873

188068331 52

32

220|06833152

Facit above 16 per cento per anno.

First caſt up what 100 l will come to at 16 per cento for intereſt for 5 yeares, and every yeare intereſt upon intereſt, facit 210 l as in the fraction of working, then caſt up what 32 pound will amount unto in 5 yeares with intereſt after 16 per cento per anno intereſt upon intereſt, and in working your 2 laſt numbers together, leoke how many cyphers you have in your divider, ſo many places from your right hand place your 32. and add it to the former product, and having done, multiply your dividers, which are 8 cyphers, and therefore I cut off 8 figures, as in example.

(13.) A doth owe unto B 800 l to be paid within 4 yeares, and B doth owe unto A 900 l to be paid in 6 yeares, to ſay every two yeares 300 l. now they do agree to cleare their debts preſently in allowing each other 8 per cento per anno for intereſt, and every yeare intereſt upon intereſt, the queſtion is, which of them muſt pay money to the other, and how much.

108 . . 100 . . 300
180 . . 100 . . ----

11664 3000000
3499200

108 . . 100 . . 6499200

1259712
108 . . 100 . . ----

136048896 40814668800
108 . . 100 . . ----

14693280768
108 . . 100 . . ----

1586874322944 *Facit* l 666. 15. 2, &c.

108 . . 100 . . 800
108 . . 100 . . ----
108 . . 100 . . ----
108 . . 100 . . ----

Facit l 588. ---. 5, &c.

8000000000000
xx9755222x
0926401554
732983o8
6478640
795920
9 5

x05806668800000000
x059420942336662
x07296388569992
x2083879192248
24167738385776
829906525622x
4264613541 23
1 2759 2805
0 22 3 5

Facit B must pay unto A in ready money 78 l 14 sh 9 d &c.

First cast up B his debt for the first two yeares, facit 3000000 for divident, and 11664 for divider, then I should add to the third number 300 l. which I bring into such parts as my divider is, by multiplying it by my divider, facit 3499200. and so continue downeward, multiplying your divider together, then for the third two yeares, I should add 300. which I bring into such parts as my divider is, and therefore do multiply 136048896 my divider by 300. facit 40814668800 added to the next above, facit with the foure ciphers 1586874322944 for dividend being divided facit 666 l 15 sh 2 d. which is B his debt ready money, then cast up A his debt, your divident is 8 and 10 ciphers, and for your divider looke in the former worke of this question, and you shall find the product of 4 times 108 multiplied together, which is 136048896 for divider, being divided facit 588 l and 5 d A his stocke ready money, substract from B his money, remaines 78 l 14 sh 9 d which B must pay unto A.

N QVESTIONS

QVESTIONS OF LENDING MONEY IN Recompence of Money borrowed.

(1.)



Doth lend unto B 200 l for 5 moneths, the queſtion is for how long time B muſt lend 150 l to A to recompence the pleaſure, without reckoning intereſt upon intereſt. Anſwer. Such reaſon as the money which B muſt lend unto A hath to the money which A doth lend unto B, ſuch reaſon muſt the time which A doth lend his money, have to the time which B muſt lend his money.

Conſider that 200 doth containe 150 — 1.1 time, therefore the unknowne number muſt containe 5. 1.1 times, therefore divide 5 by 3 facit 1 2/3 which added to the 5 facit 6.2/3

150 . . 200 . . 5

1 2/3

Facit for 6 2/3 moneths.

(2.) A doth lend unto B 400 l for 7 moneths, the queſtion is how much money B muſt lend unto him

him, againe for 12 moneths to recompence the pleasure without reckoning interest upon interest. Answer. Such reason as the time for the which B must lend his money, hath to the time that A doth lend his money, such reason must the money which A doth lend, have to the money which B must lend.

Multiply the last by the middle, and divide by the first.

2800

Facit 1233, 6. 8



N 2 QVESTI-

QVESTIONS OF PAYING AND RECEIving of Money.

(1.)

IF one piſtolet be worth 6 ſh 11 d. and 3 are reckoned to a caſt, how many caſts amount to 247 l.

6. 11 . . 1 . . 247

83 *Facit* 238 caſts 1 ſh 6 d

19760
3176
6

First I bring the firſt number into pence, facit 82. then I ſhould multiply the third number by 240 to bring it into pence like the firſt, and then it would come out piſtolets, which I ſhould divide by 3. but to prevent it I multiply the 247 by the 1 of 240 which is 80. facit 19760. which I divide by 83. 3 facit 238. 6 of a caſt, imagine it is 3 times as much, and is 1 ſh 6 d ſo that all added facit 238 caſts, 1 ſh 6 d

(2.) If one Philippus dallar be worth 4 ſh 11 d. and 12 are reckoned for a heape, how many heapes amount to 417 l 17 ſh 9 d.

4. 11 . . 1 . . 417. 17. 9

59 8357

708 *Facit* 141 heaps 7 dallers 4 ſh 4 d

100293
29475
1162
45

Multiply the firſt number by 12 two times, facit 708 the third number into pence, facit 100293. divide by 708 by the rence of one heape, as in example.

QVESTIONS OF PAYING AND RECEIVING with profit or losse.

(1.)

IF a merchant doth sell 187 l 13 sh 6 d in Spanish reals, for other money, how much other money must he receive when he is allowed 2 per cento de lazo.

Heere consider that if 100 gaine 2 l then 187 l 13 sh 8 d gaines 3 l 15 sh 2 1/2 d being added to the 187 l 13 sh 6 d facit 191 l 8 sh 6,21 d. 37

100 . . 2 . . 187.13.6

l 3|75.7
sh 15|07
d ----|84

Facit l 191. 8. 6 21/37

(2.) If a French crowne be worth 6 sh and 1 1/2 per cento de lazo, to how much amount 983 French crownes.

Here consider that if 1 crowne bee 6 sh. 983 crownes be worth 298 l 18 sh. accoūt 6 sh to be $\frac{3}{10}$ l. then he is allowed 1.1 per cento, then I say in mind if 100 yeeld 1.1 what doth 294—18

1 . . 6 . . 983

294.18.—
147. 9.—

l 4|42.7.—
sh 8|47
d 5|64

Facit to l 299.6.5 $\frac{16}{17}$

this last summe I multiply by 1.1 by 1 as it is, and by 1 take the $\frac{1}{10}$ of it, then added together, facit 442 l 7 sh. which divide with the shillings and pence by 100. facit 4 l 8 sh 5 16/17 d. added to the 294 l 18 sh. facit 299 l 6 sh 5 16/17 d.

(3.) A merchant hath owing 87 pounds, and his debter doth pay him with dallers at 4 sh 1 d the peece, which are worth but 4 sh $\frac{1}{2}$ d. the question is how much he doth lose.

If 4 sh 1 d lose 1 $\frac{1}{2}$ d. what will 87 l lose? facit 17 sh 9.3 $\frac{3}{7}$ d. first I multiply the 4 sh 1 d by 12 facit 49. then I should multiply the third number by 20 to bring it into shillings, and by 1 the middle number, so that to multiply by 20 and by $\frac{1}{2}$ is to multiply by 10. then suppose I see a cypher before 87. and do divide by 7 and 7 because 7 times 7 is 49.

4 . 1 . . $\frac{1}{2}$ . . 87

12

49

124.3 $\frac{3}{7}$

Facit 17 sh 9 $\frac{3}{7}$ d.

QVESTIONS

QVESTIONS OF PAYING OR RECEIVING of debts due at many ſeverall times all at one time, and alſo at ſeverall times.

(1.)

A Merchant hath owing 300 l to be paid 100 l at two moneths, and 200 l at 5 moneths, and his debter doth agree to pay him all at one paiment, the queſtion is when that paiment muſt be, that neither have advantage of the other, without reckoning intereſt upon intereſt. Anſw. Thoſe paiments which are multiplied by the number of the yeares, moneths, or other name of time in which they are due, and their products are equall, are one as good as another in reſpect of time, and without reckoning intereſt upon intereſt.

In this queſtion and the like multiply the money by the time, and there add the product of the multiplied time, accounting it money like the firſt number, and that aggregat divide by the aggregat of the firſt number added together, and the quotus will ſhew what time the money ſhould be paid 3 numbers 2 and 10 ſhould be 200 and 1000 but I leave out the cyphers, becauſe I purpoſe to cut off the cyphers of the firſt number.

100	. .	2	. .	2
200	. .	5	. .	10
3				12

Facit at 4 moneths.

In this queſtion and the like if your debitor doe agree to pay all the debts due at ſundry times at one paiment, firſt place the debts one under another, and the time when they are due one under another right againſt the debts, and multiply the debts by the time, then add the products together, and divide their aggregat by the aggregat of moneyes added together, and the quotus doth ſhew the time when that is to be paid.

(2.) A merchant hath owing 197 l 17 ſh 11 d. to be paid $\frac{1}{4}$ at five moneths, $\frac{1}{3}$ at 7 moneths, and the reſt at 9 moneths: and his debter doth agree to pay it all at one paiment, without reckoning intereſt upon intereſt, the queſtion is when that paiment muſt be, that neither have advantage of the other.

$\frac{1}{4}$ . . 5 . . $1\frac{1}{4}$
$\frac{1}{3}$ . . 7 . . $2\frac{1}{3}$ } *Facit* at $7\frac{1}{3}$ moneths.
$\frac{5}{12}$ . . 9 . . $3\frac{3}{4}$

Do this queſtion in all reſpects like the firſt, your dividend is 236. and your divider 56. which I part into 8 and 7. becauſe that 8 times 7 is 56.

(3.) A merchant hath owing 560 l to be paid 100 l content, 200 l at 4 moneths, and the reſt at 6 moneths, and his debter doth agree to pay him altogether at one paiment, the queſtion is when that paiment muſt be, that neither have advantage of the other, without reckoning intereſt upon intereſt.

100 . . --- . . ----
200 . . 4 . . 80
260 . . 6 . . 156

56 236
$29\frac{1}{2}$
Facit at $4\frac{1}{4}$

(4.) A doth owe unto B 500 l to be paid 200 l at 3 moneths, and the reſt at 6 moneths: and B doth owe unto A 700 l. to be paid at 9 moneths: and they do agree that A ſhall pay all his money content, and B his ſo much the ſooner, the queſtion is when B muſt pay the 700 l that neither have advantage of the other, without reckoning intereſt upon intereſt.

200

200 . . 3 . . 6
300 . . 6 . . 18 *Facit* at $5\frac{4}{7}$ moneths.

7 24
$3\frac{3}{7}$

In this queſtion firſt I multiply A his money by his time, and the aggregat of the product is 24. and to know how much B muſt pay his money the ſooner to requite A his kindneſſe, which muſt needs be at ſuch a time, the multiplication being multiplied by it, the product is 24 which to know, the way is to divide 24 by 7 the money, the quotus is 3 and $\frac{3}{7}$ then he muſt abate 3.3 of 9 moneths, and the remainder is the time when he muſt pay the reſt.

(5.) A merchant hath owing a ſumme of money, to be paid $\frac{1}{4}$ content, $\frac{1}{7}$ at 4 moneths, and the reſt at 6 moneths, and his debter doth agree to pay him $\frac{2}{7}$ content, and the reſt altogether at one paiment, the queſtion is when that paiment muſt be, that neither have advantage of the other, without reckoning intereſt upon intereſt.

$\frac{1}{4}$ . . — . . —
$\frac{1}{7}$ . . 4 . . $1\frac{1}{7}$ } *Facit* $3\frac{1}{7}$
$\frac{5}{7}$ . . 6 . . $2\frac{1}{2}$ }

Facit at $11\frac{1}{2}$ moneths.

In this queſtion firſt I conſider when the common time is for the debt to bee paid, and the firſt is at 3.5 moneths, then I conſider that if he pay the $\frac{1}{7}$ content, then he is to have the reſt for a double time, that is twice ſo long, if hee pay $\frac{1}{7}$ content, he is to have $\frac{1}{7}$ of the time, ſo long if the $\frac{2}{7}$ of the money content he is to have the reſt $\frac{2}{7}$ of the time longer.

(6.) A merchant hath owing 463 l 17 ſh 9 d. to be paid at ſeven moneths, and his debter doth agree to pay him $\frac{1}{3}$ content, $\frac{1}{7}$ at 4 moneths, the queſtion is at what time he muſt pay the reſt, that neither have advantage of the other, without reckoning intereſt upon intereſt.

In this queſtion a merchant hath money owing to be paid at 7 moneths, but the debter doth pay the $\frac{1}{3}$ content and $\frac{1}{3}$ at 4 moneths, being multiplied by his time makes $1\frac{1}{3}$ but ſubſtracted from the product of 7. remaines $5\frac{2}{3}$ now the time when he ſhould pay the reſt, which is the $\frac{1}{6}$ is found out by dividing the remainder of time the $\frac{1}{6}$ $5\frac{2}{3}$ we divide by one, the quotus wilbe —— but by $\frac{1}{6}$ the divider muſt needs be twice as much, the quotus is 34 moneths, ſo long time he muſt have to pay the other $\frac{1}{6}$ as in example.

1	. .	7	. .	7
$\frac{1}{3}$	. .	—	. .	—
$\frac{1}{3}$	. .	4	. .	$1\frac{1}{3}$
$\frac{1}{6}$				$5\frac{2}{3}$

Facit at 34 moneths.

First conſider that the debter doth pay 150 of his debt 4 moneths ſooner than hee ſhould do, & therfore I do account as if I hadlent him 150 l for 4 moneths which time being multiplied by the money make 60. there remaines 250. which ſhould be forborn ſuch time as will recompence the other, and therefore I cut off the cyphers from 150 as I do from 150.

(7.) A merchant hath owing 400 l to be paid at 7 moneths, and his debter doth agree to pay him 150 l at three moneths, on condition that he ſhall let him have the reſt for ſo much the longer, the queſtion is when he muſt pay the reſt, that neither have advantage of the other, without reckoning intereſt upon intereſt.

400		
150	. . 4 . .	60
25		$2\frac{2}{7}$
		7

Facit at $9\frac{2}{7}$ moneths.

and then I will divide 60 the product of the firſt number, the quotus $2\frac{2}{7}$ moneths, which time 250 l being forborne, do requite 150 l for foure moneths, becauſe their products are equall.

(8.) A merchant hath owing 99 pounds and 11 pence, to be paid $\frac{1}{3}$ content, $\frac{1}{4}$ at 3 moneths, $\frac{1}{7}$ at 5 moneths, and the reſt at 7 moneths: and his debter doth agree to pay him all together at one paiment, the queſtion is when that paiment muſt be, that neither

neither have advantage of the other, without reckoning intereſt upon intereſt.

$\frac{1}{3}$ . . — . . —
$\frac{1}{4}$ . . 3 . . $\frac{1}{4}$
$\frac{1}{7}$ . . 5 . . 1
$\frac{15}{60}$ . . 7 . . $1\frac{1}{60}$
} *Facit* at $3\frac{4}{17}$ moneths.

This queſtion and ſuch like are done by multiplying the money by the time, then add the money together, and the product of the multiplication together, then divide the product of the multiplication by the product of the money.

(9.) A merchant hath owing 173 l 17 ſh 11 d to be paid $\frac{1}{7}$ at two moneths, $\frac{1}{4}$ at three moneths, $\frac{1}{3}$ at foure moneths, and the reſt at 5 moneths: and his debter doth agree to pay him $\frac{1}{3}$ content, and the reſt all at one paiment, the queſtion is when that paiment muſt be, that neither ſurmount the other, without reckoning intereſt upon intereſt.

$\frac{1}{7}$ . . 2 . . $\frac{2}{7}$
$\frac{1}{4}$ . . 3 . . $\frac{1}{4}$
$\frac{1}{3}$ . . 4 . . $1\frac{1}{3}$
$\frac{13}{60}$ . . 5 . . $1\frac{13}{60}$
} *Facit* $3\frac{17}{60}$.

Facit at $7\frac{2}{15}$ moneths.

This queſtion is like the former of this kind, and by diverſe ſummes due at ſeverall times, for then all is at $3.\frac{7}{15}$ moneths, but the debter would pay $\frac{1}{3}$ content, and would have the like kindneſſe in forbearing the reſt and paying $\frac{1}{2}$ the money, $3.17\frac{1}{3}$ ſooner than it was due, it is reaſon that he ſhould pay the other $3.17\frac{1}{60}$ after that is due, which added together ſaith $7.\frac{2}{15}$ moneths.

(10.) A

First set downe the debt and time and multiply the one by the other, facit 3600. then set downe the money that is and shalbe paid, and the time with it,

400	. .	9	. .	3600
100	. .	---	. .	---
150	. .	2	. .	300
150				3300

Facit at 22 moneths.

multiply the time, facit 300. this product subtract from 3600, remaines 3300. then subtract your 250 from 400 remaines 150. this 150 should be paid at such a time as being multiplied by it, the product should be 3300 which to do, I divide 3300 by 150. cutting off cyphers from 150. and from 3300. and then divide 330 by 15.

(11.) A doth owe unto B 200 pound, to be paid 40 pound content, 50 pound at 2 moneths, 60 pound at 3 moneths, and the rest at 4 moneths: and B doth owe unto A 500 pound, to be paid 50 l content, 100 pound at 4 moneths, 200 pound at 6 moneths, and the rest at 8 moneths: and they do agree that A shall pay 90 l content, and the rest at one moneth, on condition that B shall pay the 500 pound at one paiment for so much the sooner, the question is when that paiment must be, that neither have advantage of the other, without reckoning interest upon interest.

40	—	—	—	50	—	—	—
50	2	100	100	4	400		
60	3	180	200	6	1260		
50	4	200	150	8	1200		
		480	50		280		
					37		
90	—	—	—		243		
110	1	110	*Facit* at $4\frac{43}{90}$ moneths.				

First set down A his debts and the time when they should be paid, and multiply his money by his time, the products being added together, facit 480. but this man hath made another bargaine to pay his money (viz. 200 l.) 90 l content, and 110 at one moneth: this second agreement, his money being multiplied by his time, facit 110. which if it should bee divided by 200 the aggregat of the money, it would come forth in a shorter time of paiment, than if 480 had been divided by 200 therefore I take this 110 from 480. remaines 370. then I multiply B his debt and time of paiment together, then I add his money together, and the product of the multiplication together, facit 2800 but I leave out the cypher because I may leave out another in the products of the moneyes, remaines 50 and 280. then I take away the cyphers of the difference remaine 37, which I substract from 280. remaines 247 for divident, and 50 for divider.

(12.) A merchant doth owe 700 l 13 sh 4 d. to be paid 133 l 13 sh 4 d content, 277 l 13 sh 4 d. at 4 moneths, and the rest at 7 moneths, and he doth agree with his creditor to pay him 333 l 6 sh 8 d content, to give him an obligation of 257 l 3 sh 4 d. to be paid $\frac{1}{3}$ at 2 moneths, $\frac{1}{2}$ at 3 moneths, and the rest at 4 moneths, and for the rest to give him his owne obligation, the question is at what time his obligation must be made to be paid that neither have advantage of the other, without reckoning interest upon interest.

$\frac{1}{3}$

2/3 . . 2 . . 2/3	277.13:4	. 4 . .	11.10.13.4
1/4 . . 3 . . 3/4	289. 6.8	. 7 . .	2025. 6.8
1/12 . . 4 . . 1 1/3	567. — . —		3136. — . —
3,1/2	199.13.4	. — . .	— — —
	257. 3.4	. . 3 1/11 . .	792.18.7 1/3
	456.16.8		
	110. 3.4	. .	2343. 1.4 2/3
	2203		46861
	26440		562336
	7932	*Facit* at 21 7/11 moneths.	
			168701
			20069
			212

A merchant doth owe 700 l 13 sh 4 d. and should pay 133 l 13 sh 4 d content, but he makes a new bargaine, and in his new bargaine he should pay a greater summe content, and ere he doth set downe his summe, but so much of the other summe in his next worke, as it is greater than 133 l 13 sh 4 d. but doth first begin with 277 l 13 sh 4 d at 7 moneths, facit 2110 l 13 sh 4 d. and the rest which is 289 l 6 sh 8 d. at 7 moneths, facit 2025 l 6 sh 8 d. the money added together 567 l. and the product added together facit 3136 l. then for the last bargaine he doth first set downe so much of his money he is to pay content, as it is greater then the money he should first pay content, which is 199 l 13 sh 4 d. at no time, then 253 l 13 sh 4 d. at 9 1/11 moneths, which is found next the margent, this money and time multiplied together facit 7921 l 18 sh 7.1 d. now to know when the rest of the money of this last bargaine should be paid, I substract the money of this last bargaine, which is 456 l 16 sh 8 d. from the money of the first bargaine, remaines 110 l 3 sh 4 d. I likewise substract the product of this last from the product of the first rests 46861. which is the product of the money remaining multiplied by the time the last obligation is to be made at, and to know it, I do divide (as the usuall manner is) the product by the money, as for first I bring 110 l 3 sh 4 d into pence, facit 26440. then I bring the denominator hither, and say, 3 times 4 is 12. leaving out the cypher, facit 7932. then I bring the other into pence, facit 562336. then into the fraction, facit 1687000. but I leave out the cypher, or the cypher of the divider which was left out, so that my divident is 168701 as in example.

QVESTIONS

QVESTIONS OF purified Gold or Silver in the fire.

(1.)

A Gold-ſmith hath an ingot of ſilver of 7 oz. fine weighing 28 oz. which he doth purifie in the fire untill there remaineth but 24 oz. the queſtion is how much fine ſilver the pound ſo purified containeth.

Conſider that when an ingot is purified being 28 oz. and melted to 24. looke what reaſon is between 24 and 28 oz. ſuch reaſon is between 7 oz. and the fineneſſe it is, which is 1.1/2 for 24 oz. is cõtained in 28 1.1/2 this 1.1/2 add to 7. facit 8.1/2 for if an ingot be 40 oz. of 6 oz. fine, then there is in it 20 oz. of ſilver and 20 oz. of copper, ſo that if you purifie it till it come to 20 oz. it is all fine ſilver, and if you purifie it to 30 oz. then it is 9 oz. fine.

24 . . 28 . . 7

1 1/2

Facit 8 1/2 oz. fine.

(2.) A

(2.) A Gold-smith hath an ingot of silver of 5 oz. fine weighing 69 oz. the question is how much copper he must consume in the fire to make it be of 7 ounces fine.

This question and the like you must do it in this manner following, first substract the fineness it is from the fineness it must bee, and let the remainder bee your middle number, and the fineste that it shall be your first number, then say if 7 lose 2. what shall 69 loset facit 15.5/7 ounce.

7
5

7 . . 2 . . 69
138

Facit 19⅝ oz.

QVESTIONS

QVESTIONS OF OF MIXTIONS OF GOLD and Silver, and other Metals.

(1.)

A Gold-ſmith hath an ingot of fine ſilver weighing 39. oz. the queſtion is how much copper he muſt mixe with it, that the pound mixed containe 9 ounces fine.

9 . . 3 . . 39

Facit 13 oz. of copper.

First conſider, that the pound is 12 oz ſo that if your ingot bee 39 oz. fine ſilver, and you would know how much copper you ſhould mixe with it to make it 9 oz. fine, you muſt conſider that if it bee 9 oz. fine, that is, if 12 have 9 oz fine, it muſt have 3 copper, therefore you may place your queſtion ut ſupra, and this queſtion will ſerve for 5, 6 or 8 oz. fine, or the like memento.

(2.) A gold-ſmith hath 40 oz. of copper, the queſtion is how much fine ſilver he muſt mixe with it, that the pound mixed containe 5 oz. fine.

7 . . 5 . . 40

200

Facit $28\frac{4}{7}$ oz. of fine ſilver.

Conſider if there be 5 oz. of ſilver, there muſt be 7 oz of copper, and becauſe that there wilbe more copper, I ſet the biggeſt number formoſt, and ſay, as 7 is to 5. ſo is 40 oz. of copper to the quantity of ſilver which muſt be put to it.

(3.) A Gold-ſmith hath an Ingot of ſilver of 7 oz. fine, weighing 40 oz. the queſtion is how much fine ſilver he muſt mixe with it to make it of 9 oz. fine.

In this queſtion and the like firſt ſet downe the fineneſſe in the third place, the fineneſſe of the ſilver that is to be mingled with it, & in the middle by themſelves ſomewhat high place the fineneſſe it muſt be of, then looke how much the firſt number is baſer than the middle number, let that bee your middle number in working, and then looke how much the third number is finer than the middle number, let that be your firſt number, ſaying, if 3 require two oz what will the whole Ingot require which is 40 oz, facit 26 oz. 13 d 5 gr.

9
7 . . 12
3 . . 2 . . 40
Facit 26 oz. 23 d. 8 gr.

(4.) A merchant hath two ſorts of tin, to ſay 9 C at 54 ſh the hundred: and other at 49 ſh the hundred, the queſtion is how much of that he muſt mix with the 9 C weight of the firſt, that the hundred mixed come to 52 ſhillings.

In this queſtion and the like you muſt firſt ſet down the good you will have it to bee of, and a little lower on the left hand the goodneſſe it is, and as low on the right hand the goodneſſe of the other that you will mixe with the firſt, and looke how much the firſt number is worſe than the goodneſſe it ſhall be, let it be the middle number in working, and looke how much the goodneſſe of that which muſt be mixed with it is better than the fineneſſe it ſhall be, let that be your firſt number, and the third number muſt be the maſſe wherewith you will have the metall mixed, then ſay, if 3 require 2, what will 9 require? facit 6 C.

54 . . 49
52
3 . . 2 . . 9
3
Facit 6 C weight.

(5.) If a hundred weight of lead coſt 11 ſh. how much lead muſt I mixe with 1874 L of tin at 53 ſh the hundred to make it be worth 51 ſhillings the hundred.

53 . . 11
51

40 . . 2 . . 1874

Facit 93 7/12 L.

This queſtion is done altogether like the laſt, provided that the maſſe which is the third number, that ſort muſt bee the number plac'd at the left hand ſide of the goodneſſe it muſt be and the values they be, how much it is either better or worſe than it ſhall be, muſt be the middle number, as in the laſt queſtion, but that this firſt number is better than the middle.

(6.) A gold-ſmith hath an Ingot of ſilver of 8 oz. fine weighing 78 oz. 9 d. the queſtion is how much ſilver of 11 oz. fine he muſt mixe with it, that the ounce mixed containe 9½ oz. fine.

8 . . 11
9½

Facit 78 oz. 9 pence.

This queſtion and all other the like are done as the 2 latter queſtions are, and becauſe that the fineneſſe it ſhalbe is much better than the firſt, as the latter is better than the fineneſſe it ſhalbe, and in regard the firſt and ſecond numbers willbe in reaſon of equality, and therefore it needs no worke, becauſe the fourth number muſt be equall to the third.

(7.) A gold-ſmith hath fine gold of 24 kar. fine, and he will make a ring of 12 d weight of 19 kar. fine, the queſtion is how much of his fine gold muſt go to it, and alſo how much delee.

24 . . 19 . . 12

Facit 9½ d of fine gold.
and 2½ d of delee.

Conſider that this queſtion and the like to it, if he had made the ingot of 12 d weight of 19 kar. then had need of no delee, but he will have it of 19 kar. and therefore as 24 kar. is to 19. ſo is 12 pence to the quantity of fine gold, that you muſt have, the reſt muſt be delee.

This question and the like before you must consider what difference there is, for looke how much 8 oz. fine is finer than 6½ oz. fine, so much of the ingot you must take, the rest must be delee.

(8.) A gold-smith hath an ingot of silver of 8 oz fine, and he will make another ingot weighing 40 oz. of 6½ oz. fine, the question is how much he must take of the aforesaid ingot, and also how much copper, to make the ingot.

8 . . 6½ . . 40

Facit 32½ oz. of the ingot.
and 7½ oz. of copper.

First place the two fineneſſe one against the other, with two prickes by, and the fineneſſe it shalbe by themſelves a little lower or higher, then consider that the 1 is coarſer than the middle number by 4. and the other finer by 3 so that both added together, make 7, then say if 7 make 4. what doth 8 make, as in example.

(9.) A gold-smith hath gold of 17 kar. fine, and he will make a ring of 8 d weight of 21 kar. fine, the question is how much gold of 17 kar. fine must goe to it, and also how much fine gold of 24 kar. fine.

17 . . 21
24

7 . . 3 . . 8

Facit 3 d 20/7 gr. of 17 kar. fine.
and 4 d 13/7 gr. of 24 kar. fine.

Here you must consider that the ingot must bee made of 19 kar. fine weighing 8 d in gold, or 22 kar. if the ring should be made of 22 kar. then the 8 d should be all of that gold, but it must bee made of 19 kar. therefore it have some then say, as 22 kar is to 19 kar. so is the 8 d to the quantity of gold to the 22 kar. that the ring which is 12 d. weighing 2. 2 d. the rest must be delee, as in example.

(10.) A gold-smith hath gold of 22 kar. fine, and he will make a ring weighing 14 d of 19 kar. fine, the question is how much gold of 22 kar. fine must go to it, and also how much delee.

22 . . 19 . . 14
11 7

133

Facit 12 d 2 1/11 gr. of 22 kar. fine.
and 1 d 21 9/11 gr. of delee.

must delee, ha

(11.) A

(11.) A gold-ſmith hath ſilver of 8 oz. fine, and of 11 oz. 4 d fine, the queſtion is how much he muſt take of each ſort to make ſilver of 10 oz.

8 . . 11 . 4
10
1 . 4 . . 2

Facit as often as he doth take 2 oz. of 11 oz. 4 d fine, he muſt take 1 oz. 4 d of 8 oz. fine.

In this queſtion (as in the other) place the 2 fineneſſe one againſt the other, and the fineneſſe it ſhalbe, by taking a little higher or lower, then ſee how much the firſt number is either finer or coarſer than the middle number, and place the difference in the middle, then place the delee the ſecond and third number in the firſt place, as in example.

(12.) A gold-ſmith hath ſilver of 7 oz. & of 11 oz fine, the queſtion is how much he muſt take of each ſort to make an Ingot weying 50 oz. of 10 oz. fine.

11 . . 7
10
4 . . 1 . . 50

Facit 12 oz. 10 d of 7 oz. fine, and 37 oz. 10 d of 11 oz. fine.

This queſtion (as moſt of the queſtions before of mixtions) muſt have both fineneſſe one againſt the other, and the finer it ſhall bee, take a little higher or lower with a line under them, and the delee by the firſt and ſecond doing, ſee how much you muſt take of the third fineneſſe being placed under the third number, add the delee by the third, and ſecond number doth ſee how much you muſt take for the ſecond number being placed under the firſt number, as in example.

(13) A gold-ſmith hath ſilver of 7 oz. 8 d fine, of 8 oz. 3 d 11 gr. fine, and of 10 oz. 11 d 13 gr. fine, the queſtion is how much he muſt take of each ſort to make ſilver of 9 oz. fine.

7 . 8 . . 8 . 3 . 11 . . 10 . 11 . 13
9
1 . 11 . 13 . . 1 . 11 . 13 . . 1 . 12 —
—. 16. 13

In this queſtion & the like where many fineneſſes are to be mingled together, alway compare a leſſe with a greater, as in this queſtion there are two numbers leſſe than the fineneſſe it muſt be, and one number better than the fineneſſe it muſt be, as in example.

Facit he muſt take as much of 7 oz 8 d fine as of 8 oz. 3 d 11 gr. fine, and as often as he doth take 1 oz. 11 d 13 gr. of each of thoſe ſorts he muſt take 2 oz. 8 d 13 gr. of 10 oz. 11 d. 13 gr. fine.

This queſtion and the like before you muſt conſider what difference there is, for looke how much 8 oz. fine is finer than 6 1/3 oz. fine, ſo much of the ingot you muſt take, the reſt muſt be delee.

(8.) A gold-ſmith hath an ingot of ſilver of 8 oz fine, and he will make another ingot weighing 40 oz. of 6 1/3 oz. fine, the queſtion is how much he muſt take of the aforeſaid ingot, and alſo how much copper, to make the ingot.

8 . . 6 1/3 . . 40

Facit 32 1/2 oz. of the ingot.
and 7 1/2 oz. of copper.

First place the two fineneſſe one againſt the other, with two pricker

(9.) A gold-ſmith hath gold of 17 kar. fine, and he will make a ring of 8 d weight of 21 kar. fine, the queſtion is how much gold of 17 kar. fine muſt goe to it, and alſo how much fine gold of 24 kar. fine.

MIS-PRINT IN ORIGINAL.

5

chen the 8 dſt ould be all of that gold, but it muſt bee made of 19 kar. d therefore it have ſome

133

Facit 12 d 2 2/11 gr. of 22 kar. fine.
and 1 d 21 9/11 gr. of delee.

hen ſay, as 22 kar is to 19 kar. ſo is the 8 d to the quantity of gold to the 22 kar. the ring which is 22 d. weighing 2. 2 d. the reſt muſt be delee, as in example.

2 2

muſt delee,

(11.) A

(11.) A gold-ſmith hath ſilver of 8 oz. fine, and of 11 oz. 4 d fine, the queſtion is how much he muſt take of each ſort to make ſilver of 10 oz.

8 . . 11 . 4

10

1 . 4 . . 2

Facit as often as he doth take 2 oz. of 11 oz. 4 d fine, he muſt take 1 oz. 4 d of 8 oz. fine.

In this queſtion (as in the other) place the 2 fineneſſe one againſt the other, and the fineneſſe it ſhalbe, by taking a little higher or lower, then ſee how much the firſt number is either finer or coarſer than the middle number, and place the difference in the middle, then place the delee by the ſecond and third number in the firſt place, as in example.

(12.) A gold-ſmith hath ſilver of 7 oz. & of 11 oz fine, the queſtion is how much he muſt take of each ſort to make an Ingot weying 50 oz. of 10 oz. fine.

11 . . 7

10

4 . . 1 . . 50

Facit 12 oz. 10 d of 7 oz. fine, and 37 oz. 10 d of 11 oz. fine.

This queſtion (as moſt of the queſtions before of mixtions) muſt have both fineneſſe one againſt the other, and the finer it ſhall bee, take a little higher or lower with a line under them, and the delee by the firſt and ſecond doing, ſee how much you muſt take of the third fineneſſe being placed under the third number, add the delee by the third, and ſecond number doth ſee how much you muſt take for the ſecond number being placed under the firſt number, as in example.

(13.) A gold-ſmith hath ſilver of 7 oz. 8 d fine, of 8 oz. 3 d 11 gr. fine, and of 10 oz. 11 d 13 gr. fine, the queſtion is how much he muſt take of each ſort to make ſilver of 9 oz. fine.

7 . . 8 . . 8 . 3 . 11 . . 10 . 11 . 13

9

1 . 11 . 13 . . 1 . 11 . 13 . . 1 . 12 . . 16 . 13

Facit he muſt take as much of 7 oz 8 d fine as of 8 oz. 3 d 11 gr. fine, and as often as he doth take 1 oz. 11 d 13 gr. of each of thoſe ſorts he muſt take 2 oz. 8 d 13 gr. of 10 oz. 11 d. 13 gr. fine.

In this queſtion & the like where many fineneſſes are to be mingled together, alway compare a leſſe with a greater, as in this queſtion there are two numbers leſſe than the fineneſſe it muſt be, and one number better than the fineneſſe it muſt be, as in example.

(14.) A gold-ſmith hath two ſorts of gold, to ſay of 15 kar. in gold, and 4 kar. in ſilver, and of 21 kar. in gold and 2 kar. in ſilver, the queſtion is how much he muſt take of each ſort to make a cup of 20 kar. in gold, and alſo how much ſilver the ounce of that cup ſhall containe.

I place the two fineneſſes of the gold as formerly, right one againſt another, and a little lower by themſelves the fineneſſe it muſt bee, then I compare them together, and I find that with 1 oz. of 15 kar. I muſt take 5 oz. of 21 kar. then I conſider that if I take 5 oz. of 21 kar. I take 5 times 2 oz. of ſilver, facit 10 oz which I place under the 50 z. then with the 1 oz. of 15 kar. I receive 4 oz of ſilver, then ſay if 6 oz. of mixe hath 14 kar. of ſilver, what hath 1 oz facit 2 $\frac{1}{3}$ kar. of ſilver.

15 . . 21
20
1 . . 5
4 . . 10

6 . . 14 . . 1

Facit the oz. ſhall containe 2$\frac{1}{3}$ kar. in ſilver, and he muſt take 5 times as much of 21 kar. fine as of 15 kar. fine.

(15.) A gold-ſmith hath 4 ſorts of gold, to ſay of 12 kar. 15 kar. 18 kar. and 21 kar. fine, and he will make a cup of 16 kar. fine weying 70 oz. the queſtion is how much gold he muſt take of each ſort.

First hee placeth the fineneſſe as hee did in the other two former queſtions, and the fineneſſe it ſhalbe making the middle number under or above them, comparing them together, a leſſer alwaies with a greater, ſet the differences acroſſe then add all the differences together, facit 12 then ſay if 12 require 4. what ſhall 70 in working I take the 1 of $\frac{1}{3}$ 12. facit 3 for divider, and 1 of 4. facit 1. then remaines to divide 70 by 3. facit 23. 1 ounce of $\frac{1}{3}$ 21 kar. fine, I take the 1 of it for 2. then double the latter for 2. and for 5 double the quantity $\frac{1}{3}$ and add in the quotus of the 3.

12 . . 15 . . 18 . . 21
16
5 . . 2 . . 1 . . 4

(12 . . 70 . . 4

Facit 23$\frac{1}{3}$ oz. of 21 kar.
and 5$\frac{1}{6}$ oz. of 18 kar.
and 11$\frac{1}{3}$ oz. of 15 kar.
and 29$\frac{1}{6}$ oz. of 12 kar.

(16.) A

(16.) A gold-ſmith hath two ingots of ſilver, one of 3 ounces fine weying 50 oz. another of 5 oz. fine weighing 40 ounces, how much fine ſilver muſt he mixe with both thoſe ingots, to make them of ſeven ounces fine.

To mixe metals together, obſerve the former rules, which is to compare a leſſe with a greater, and I find I muſt take with 5 oz. of 3 oz. fine 4 oz. of fine ſilver, and with 5 oz. of 5 oz. fine 2 oz. of fine ſilver, then ſay, if 5 require 4. what will 50 oz. facit 40. and if 5 doe require 2. what will 40. facit 16.

3 . 5 . 12 — 7 — 5 . 5 . 4 — 2 — 5 . . 4 . . 50 *Facit* 40 oz.

5 . . 2 . . 40 *Facit* 16 oz.

Facit he muſt mixe with them 56 oz. of fine ſilver.

(17.) A gold-ſmith hath two Ingots of ſilver, one of 11 oz. fine weighing 96 oz. another of 9 oz. fine weighing 81 oz. how much copper muſt he mixe with both thoſe Ingots, to make them of 7 ounces fine.

This queſtion is in the like manner wrought, little difference at all.

11 . 9 . — 7 — 7 . 7 . 4 — 2 — 7 . . 4 . . 96 — 384 *Facit* $54\frac{6}{7}$ oz.

7 . . 2 . . 81 — 162 *Facit* $23\frac{1}{7}$ oz.

Facit he muſt mixe with them 78 oz. of copper.

(18.) A gold-ſmith hath two Ingots of ſilver one of five ounces fine, the other of ſeven ounces fine, and he will take three times as much of that of five ounces fine as of the other of ſeven ounces fine to make an Ingot weighing 50 ounces, of 9 ounces fine, the queſtion is how much fine ſilver he muſt mixe with it, and alſo how much he muſt take of each Ingot.

5 — 3 — 15 — 7 — 22 — $5\frac{2}{3}$

$6\frac{1}{3}$ . . $3\frac{2}{3}$ . . 50

13 — 350

Facit $26\frac{1}{13}$ oz. of fine ſilver.

$6\frac{1}{3}$ . . 3 . . 50

Facit $23\frac{1}{11}$ oz.

Facit $5\frac{10}{13}$ oz. of 7 oz. fine.
and $17\frac{4}{13}$ oz. of 5 oz. fine.

Firſt ſet downe 5 oz. and the 3 under it to multiply it, facit 15. and then the 1 oz. of 7 oz. facit 22 oz. by 4 viz. 3 of 5. and 1 of 7 oz. then 4 oz by 22 fine, 1 oz. then of 5. $\frac{2}{3}$ and then in a place aſide I mixe them and bring them to 9 oz. fine, and it requires 3 of 5. $\frac{2}{3}$ and 3. $\frac{2}{3}$ of fine ſilver both parcels added together, facit 6. $\frac{2}{3}$ then if 6. $\frac{2}{3}$ oz. require 3 oz. of fine, what ſhall 50 oz. facit 26. $\frac{12}{13}$ ounce fine, then ſubſtract that from 50. the remainder muſt be of 5 $\frac{2}{3}$ which hath in it 3 oz. of 5 oz. fine, and 1 of 7 oz. fine, facit 23. $\frac{1}{11}$ then take the 1 of this 23. $\frac{1}{11}$ facit 5. $\frac{10}{13}$ and ſo much you muſt have at 7 oz. fine, and then multiply that by 3. facit 17. $\frac{4}{13}$ ounce of 5 ounce fine.

(19.) A gold-ſmith hath two Ingots of ſilver, one of foure ounces five pence fine, the other of five ounce 13 pence 8 graines fine, and he will take of one as much as of another to make an Ingot weighing 30 ounces of nine ounces fine, the queſti-

on

on is how much fine ſilver he muſt have with it, and alſo how much of each Ingot.

4 . 5 . —	7 . — . 20	4 . — . 20	. 30
5 . 13 . 8	140	80	
9 . 18 . 8	845	485	
4 . 19 . 4	169	*Facit* $17\frac{17}{169}$ oz. fine ſilver.	

2910
1227
3
$\frac{1}{7}$

7 . — . 20 . . $1\frac{1}{7}$ . . 30

$12\frac{133}{169}$

and $6\frac{66}{169}$ oz. of each Ingot.

Set downe the two fineneſſe, and add them together, facit 9 oz. 17 d 8 gr. then take 1 of $\frac{1}{3}$ it, facit 4 oz. 19 d 4 gr. and that fineneſſe 1 oz. is of the two fineneſſes being mixed together, there is a place ſet as you did the laſt queſtion, comparing this with fine ſilver, and bringing it to 9 oz. fine, and I find you muſt take 3 oz. of the 4 oz. 19 d 4 gr. fine, and 4 oz. 10 gr. of fine ſilver added together, facit 7 oz. 20 gr. then ſay, if 7 oz. 20 gr. require 4 oz and 20 gr what will 30 oz. to worke it, firſt multiply by 20 facit 140 this you ſhould multiply by 24 to bring it into graines, but to ſhorten the worke, I bring it into 4 graine peeces, and multiply it by 6. and account the 20 graines to be 5. facit 845 for divider, in like manner I do the middle number, facit 845. then I take the $\frac{1}{7}$ of my divider, facit 169. and the $\frac{1}{7}$ of 30. facit 6. then muliply 845 by 6. facit 2910 for divident, and 169 for divider.

(20.) A gold-ſmith hath foure ſorts of gold, to ſay of 19 kar. 20 kar. 21 kar. and of 23 kar. fine, and he will make a cup weighing 45 ounces of 16 kar. fine, the queſtion is how much he muſt take of each ſort, and alſo how much delee.

19. 20. 21. 23.—
16

16. 16. 16. 16. 3
4
5
7

83 . . 19 . . 45
45

855

Facit $10\frac{25}{83}$ oz. of delee.

83 . . 16 . . 45

Facit $8\frac{16}{83}$ oz. of each ſort.

720
56

Note that this queſtion and ſuch like may have many anſwers, yet all true, &c.

The Firſt compare all your fineneſſes together and delee to bring them to 16 oz. fine, and it doth require of each ſort 16 oz. and 19 oz. of delee, then ſay if 83 which is the aggregat of all the parcels requires 19 oz. delee, which is the weight that muſt be, to worke this, multiply the 19 by 45. facit 855 which divide by 83. facit 10. 25 of delee, then ſay againe, if 83 require 16. what ſhall 45. facit 8 56 of each ſort, which you may per cento by 16 apeece.

(21.) A gold-ſmith hath two ingots of ſilver, one of 5 ounces 12 d fine weighing 40 ounces, the other of 6 ounce three pence fine weighing 46 ounces, the queſtion is how much ſilver of 11 ounces 4 d fine he muſt mixe with both thoſe Ingots, that the pound mixed containe 8 ounces fine one with another.

5 . 12 . . 6 . 3 . . 11 . 4 3 . 4 . . 2 . 8 . . 40

8 16 12 10

Facit 30 oz.

3 . 4 . . 3 . 4 . . 2 . 8 3 . 4 . . 1 . 17 . . 46

1 . 17

Facit he must mixe with them $56\frac{12}{32}$ oz. 64 37 851

2 | 12 . 3

Facit oz. 26 . 19

Firſt compare them together as the uſuall manner is then ſay if 3 oz. 4 d require 2 oz. 8 d. what 40. to worke it firſt bring the 3 oz. 4 d into 4 penny weights, ſaying, 5 times 3 is 15. and 1 is 16 for divider. and ſo do to the middle number, facit 12. then conſider that 12 is leſſe than 16 by 4. which is $\frac{1}{4}$ of 16. and therefore the facit to the worke muſt bee the $\frac{1}{4}$ of 40 leſſe than 40 facit 30 oz then for the ſecond worke bring the 3 oz 4 d into penny weights, facit 64. and ſo alſo the middle number facit 37. for third number 46 I take the $\frac{1}{3}$ of it, multiplying it by 37. facit 851 for divident, and $\frac{1}{2}$ of 64 for divider, facit 32. then I divide 851 by 4 and 8. becauſe 4 times 8 is 32.

(22.) A gold-ſmith hath ſilver of five ounces fine, of ſeven ounces 8 pence fine, and of 10 ounces 9 pence 7 graines fine, the queſtion is how much he muſt take of each ſort, to make an Ingot weighing 47 ounces of 9 ounces fine.

8. 10. 14 .. 5. 12 .. 47

5 . 7.8 . . 10.9.7 170 112
9 2047 1344

1.9.7 . . 1.9.7 . . 4.— *Facit* oz. $30\frac{1715}{2047}$ of 10 oz. 9 d 7 gr. fine.

1.12 63168
175

8. 10. 14 . . 1 . 9 . 7 . . 47

$16\frac{289}{2047}$

Facit $8\frac{289}{4094}$ oz. of 7 oz. 8 d fine and as much of five ounces fine.

Firſt compare all the fineneſſe together, and then add all your parcels together, viz. the quantities you muſt have of each, facit 8 oz. 10 d 14 gr. then ſay if 8 oz 10 d 14 gr requite 5 oz 12 d. what will 47 oz. to worke it bring the 8 oz 10 d into penny weights, as you do pounds into ſhillings, facit 170 then it ſhould be multiplied by 24 to bring it into graines, but I multiply it by 12. and ſo bring it into halfe graines, facit 2097. and the middle I bring into penny weights and 2 graines peeces (as I did the firſt number of this worke) facit 1344. multiplied by 47 facit 63168 for divident.

(23.) A gold-ſmith hath an Ingot of ſilver of five ounces fine weighing 68 ounces, of the which he doth take away 20 oz. and in the place putteth as much other ſilver of 7 oz. 8 d fine, and then of that mixtion he taketh alſo away 20 oz. and in the place putteth as much other ſilver of 11 oz. 16 d fine, the queſtion is how much fine ſilver the pound of this laſt Ingot doth containe.

12 . . 5 . . 48 *Facit* 20 oz.
12 . . 7.8 . . 20 *Facit* $12\frac{1}{3}$ oz.
148

68 . . $32\frac{1}{3}$ . . 48

12 . . 11.16 . . 20 *Facit* $22\frac{4}{17}$ oz.

236 2552
Facit $19\frac{1}{3}$ oz. 296
3

68 . . $42\frac{11}{11}$ . . 12
17 3

17 *Facit* 7 oz. 9 d $23\frac{42}{51}$ gr. fine.

289 216706
24499
881
274
66
9

First I take away the 20 oz from the 68. refts 48. then I fay, if 12 have 5 oz. what hath 48. facit 20. then I put to 20 oz. of 7 oz. 8 d fine, facit $32.\frac{1}{3}$ added to the 20 facit $32.\frac{1}{3}$ then I fay, if 64 have $32.\frac{1}{3}$ fine, what hath 48. for ſo much the ingot is when the 20 oz. againe are taken away, facit $22.\frac{14}{17}$ ounce, then I put to 30 oz. of 11 oz 16 d. and which hath 19.2 ounces fine added to the $22.\frac{1}{17}$ fine facit $42.\frac{25}{51}$ ounce fine, and the ingot is 68. then I fay, if 68 have $42.\frac{25}{51}$ ounce fine, what hath 12 oz. the workes are eaſie, but the laſt is ſomewhat harder, and thus wrought, firſt I take the $\frac{1}{3}$ of 68. facit 17. and $\frac{1}{3}$ of 12 is 3. then I ſhould carry 3 to the middle number, and carry 51 to the firſt number, but I omit multiplying the middle number by 3. and carry $\frac{1}{3}$ part of 51 to the firſt number, which is 17. then 17 times 17 is 289 for divider, then reduce the middle number into the fraction, facit 2167 for divident, as in example.

QVESTIONS

QVESTIONS TO find how much fine Gold or Silver an Ingot containeth.

(1.)

IF one pound of silver contian 10 oz. 7 d fine, how much fine doth an Ingot containe weighing 70 oz.

1 . . 10 . 7 . . 70

51 . 15 . — 5 . 10

8 . 12 . 12

Facit oz. 60 . 7 . 12 fine.

Considering 70 oz is 5 l 10 oz. then say if 1 l containe 10 oz. 7 d. 5 l containes 5 times as much, that is 51 oz. 15. d and so much your 5 l containes, which is 60 oz. then because 10 oz. is the 1/7 of 60. therefore take the 1/7 of 51 oz. 15 d. which is 8 oz 12 d. 12 gr. add it to the former, facit 60 oz. 7 d 12 gr.

(2.) If one ounce of gold containe 19½ kar. fine, how much fine doth an Ingot containe weighing 17 oz. 15 d 18 gr.

1 . . 19$\frac{1}{2}$ . . 17 . 15 . 18

8 . 17 . 21
4 . 8 . 22$\frac{1}{2}$
1 . 2 . 5$\frac{1}{2}$

Facit oz. 14 . 9 . 1$\frac{1}{2}$ fine.

Conſidering that if 1 oz. contains 12 kar. fine, 17 oz. 15 d 18 gr. would containe halfe ſo many of ounces penny weights & graines, therefore for 12 kar. of the 19. 1 take the 1 of $\frac{1}{2}$ 19 oz. 15 d. 18 gr. and for 6 kar. the 1 of the former quotus, and then for the 2. 1 kar. the 1 of $\frac{1}{3}$ $\frac{1}{7}$ the laſt quotus, all which added together, facit 14 oz. 9 d. 2. 1 gr. $\frac{1}{8}$

(3.) If one ounce of gold containe 17 kar fine gold, and 5 kar. fine ſiluer, how much fine gold and how much fine ſilver doth 49 ounces containe.

1 . . 17 . . 5 . . 49

24 . 10 . —
8 . 3 . 8
2 . — . 20

Facit oz 34 . 14 . 4 fine gold.
and oz 10 . 4 . 4 fine ſilver

If 1 oz. containe 17 kar. what doth 49 containe? to know firſt I take for 12 kar. the 1 of $\frac{1}{7}$ 49. and for 4 kar. the 1 of the quo- $\frac{1}{7}$ tus of 12. and for 1 kar. the 1 of the $\frac{1}{4}$ quotus of 4 added together, facit 34 oz. 14 d 4 gr. as you did formerly the 5 kar of 17. ſo you may doe for the 5 kar. of ſilver as in example.

QVESTIONS

QVESTIONS OF MIXTIONS OF WINES, and Wine and Water.

(1.)

IF a gallon of wine coſt 16 d. how much water muſt bee mingled with three hogſheads of wine, that the gallon mingled come to coſt 12 d.

12 . . 4 . . 3

Facit one hogſhead of water.

Conſider that 4 is the $\frac{1}{3}$ of 12. and therefore the unknowne number muſt be the $\frac{1}{3}$ of 3 which is 1. if your gallon coſt 16 d. and you would have it at 12 d ſee how much 12 will buy, which is $\frac{3}{4}$ and therefore you muſt have $\frac{1}{4}$ of water to make it a gallon, ſo that as 3 is to 1 or as $\frac{3}{4}$ is to $\frac{1}{4}$ ſo is 3 hogſheads to the facit, which is one hogſhead.

(2.) If one gallon of wine coſt 16 d. how much wine muſt be drawne out of a hogſhead containing 64 gallons, and to fill it up againe with water, that the gallon ſo mingled coſt 12 d.

In this queſtion and the like, looke how much you abate of the price, ſo much of the wine muſt you draw out and fill it up with water, wherefore I ſay, if 16 loſe 4. what ſhall 64 loſe? facit 16 gallons.

16
12

16 . . 4 . . 64

Facit 16 gallons.

(3.) A

QVESTIONS OF reducing the VVeights of one Countrey into the Weights of another.

(1.)

IF 100 L at Hambourgh be 106 at London, and 104 L at London be 100 L at Antwerpe, how many pound of Antwerpe make 100 L at Hambourgh.

First consider that the 100 ballances, then multiply 106 by 100 by prefixing two cyphers, facit 10600 for dividend, and divide by 8 and 13. because 8 times 13 is 104.

100 . . 106 . . 1
104 . . 100 . . —
1 . . —— . . 100

10600
1325

Facit $101\frac{12}{13}$ pounds.

(2.) If 1037 L at London be 1000 L at Antwerpe, and 100 L at Antwerpe be 108 at Bruges, and 80 L at Bruges be 109 L at Barcelonia, the question is how many pounds of Barcelonia make 112 L at London.

1037 . . 1000 . . 112
100 . . 108 . . —
80 . . 100 . . —

8296

Facit $145\frac{835}{1037}$ L.

1209600
28006
4818
66

First considering the 3 cyphers of the dividers ballance the 3 cyphers of 1000. then multiply 1037 by 8 facit 8296 for divider, then multiply 112 by 108. facit 12096. whereunto prefix two cyphers for 100. facit 1209600 for divident, being divided facit $145\frac{835}{1037}$ the fraction must be abbreviated by 8. as in example.

(3.) If 259 L at London be 231 L at Noremberge, and 926 L at Noremberge be 980 L at Venice, and 115 L at Venice be 100 L at Modon, and 156 L at Modon be 150 L at Corfu, and 240 L at Corfu be 360 L at Negroponte, the question is how many pounds of London make 100 L at Negroponte.

This question again may be done diverse wayes, and the same facit will come all true, by taking the part, and ballancing another, as in the last question, 59:. and the fraction may be abbreviated by 7.

360 . . 240 . . 100
150 . . 156 . . —
100 . . 115 . . —
980 . . 926 . . —
231 . . 259 . . —

226380 239834
3395700 55516182
52

Facit $84\frac{400666}{824593}$ L.

28684464
152856
1602

QVESTIONS OF *CLOTHES.*

(1.)

A Merchant at London doth buy kerſeys at 42 ſh the kerſey, and doth ſend them to Antwerpe, the queſtion is how much the kerſey ſhall come to coſt at Antwerpe, when the charges of every kerſey is 3 ſh 6 d ſterling, and that 7 ſh Flemmiſh is 6 ſh ſterling.

In this queſtion you muſt add the carriage that they coſt the ſending, to the price of the cloth, that if 20 ſh be 24. what is 71 18 ſh 9 d.

6 . . 7 . . 45 . 6
7 . 7

Facit at 53 ſh 1 d ſtz.

(2.) A merchant at London doth buy clothes at 71 the cloth, and the charges to ſend them to Antwerpe is 1 8 ſh 9 d ſterling on every cloth, the queſtion is at how much the cloth commeth to ſtand at Antwerpe, when the exchange from London to Antwerpe is at 24 ſh Flemmiſh.

In this queſtion likewiſe add the carriage to the price of the cloth, and ſo work as in example.

20 . . 24 . . 7 . 18 . 9
1 . 11 . 9

Facit at 9 . 10 . 6 ſtz.

Here consider that the partners hath 17 l cleare gaine, and 7 he had spent, which added make 24. therefore I say, if 25 come of 100. whereof come 24. facit 160. and so much he brought from London.

(3.) A merchant doth go with money from London to Sandwich, and there doth gaine after 15 per cento, and of that doth spend 7 l. and findeth to have yet gained cleare 17 pounds, the question is with how much money he departed from London.

17
7

15 . . 100 . . 24
3 20 8
1 *Facit* with 160 l.

100 : 15 :: a : $\frac{15a}{100}$

$\frac{15a}{100} - 7 = 17$

$15a - 700 = 1700$

$15a = 2400$, and $a = \frac{2400}{15} = 160$

Here I consider that if I paid 13 sh for the yard, I should have remaining 4 sh 10 d. but if I paid 14 sh 8 d. I should want 10 sh. so that differing in one yard is 1 sh 8 d. and the difference of the whole is 5 l. then say, if 1 sh 8 d come of 1 yard, of how many come 5 l. facit of 60 yards.

(4) A merchant doth buy two clothes for a certaine summe of money, and in making his reckning he doth find that if he paid 13 shillings for the yard, he should have yet remaining 4 l 10 sh. but if he paid 14 sh 8 d for the yard, he should lacke 10 sh. the question is how many yards both the clothes do containe.

14.8 4.10
13.— —.10

1.8 . . 1 . . 5.—
12

Facit 60 yards.

(5.) A

(5.) A merchant doth sell 4 clothes for 100 l. whereof the second is sold for $\frac{1}{2}$ as much as the first, the third for $\frac{2}{3}$ as much as the second, and the fourth for $\frac{1}{4}$ as much as the third; the question is for how much every cloth is sold.

12	25 . . 12 . . 100	
6	*Facit* the first for 48 l.	
4	the second for 24 l.	
3	the third for 16 l.	
	and the fourth for 12 l.	

In this question I see first what number wilbe divided by all the dexominators, & I find 12 which I place for the first price the next the $\frac{1}{2}$ of that which is 6. the next $\frac{2}{3}$ of that, and the next $\frac{1}{4}$ of that, all these I add together, facit 25. then I say, 25 25 is to 12. so is 100 to the price of the first cloth, facit 48 then the next 24, the third 16, and the fourth 12. as in example.

QVESTIONS OF SENDING MONEY OR Wares from one Countrey into another.

(1.)

A Merchant at London doth send kerseys to Venice which cost 43 shillings sterl. the kersey, and the charges of one kersey is 2 d of Venice, of which 24 make one duckat, the question is how much the kersey doth cost at Venice, when the exchange from London to Venice is at 65 d sterling.

65 . . 1 . . 43

Facit at 8 duckats and $\frac{14}{65}$ d. 7 . 22

5164
1161
46
23

First multiply the 43 by 12 facit 516 which I divide by 65. facit 7 duckats remaines, I multiply by 24. because that 24 d Venetian is one duckat, facit 22 d. then I add 2 d Venetian, which is the carriage of a kersey, so that the kersey in all comes to cost 8 duckats and 33 d. $\frac{14}{65}$ Venetian.

(2.) If 100 pound of ginger at Venice cost 16 duckats, and to send it to Frankfort the charges are three duckats, the question is in how much the centner shall come to stand at Frankfort, when 100 at Venice are 59 at Frankfort, and that the exchange be at 143 florines for 100 duckats.

16
3
59 . . 19 . 143

Facit at 46 $\frac{3}{59}$ florins.

2717
383

First I conſider that 100 l at Venice doth coſt at Franckford with carriage 19 ducats, and to know what it ſtands in at Franckford, I conſider that 100 at Venice is but 59 at Franckford, and therefore I ſay, if 59 l coſt 19 ducats, what will 100 in mind? then I conſider that if the firſt number 59 were 1. and the 19 ducats 1. then I would ſay, if 1 coſt 1 ducat, 100 will coſt 100 ducats which is 143 florins, and therefore I place 143 florins in the third place, which I multiply by 19. and divide the product by 59 as in example.

(3.) If one pound of ſaffron at Lion coſt five francks, and the charges to bring it to London is 4 d ſterling on the pound of London, and 50 ſh at Lion is 6 ſh ſterling at London, the queſtion is in how much the pound doth come to ſtand at London, when 14 pound at London is 15 pound at Lion.

14 . . 5 . . 15
$2\frac{1}{5}$ . . 6 . . —

35 90
7 *Facit* 12 ſh 10 $\frac{2}{7}$ d.

Facit at 13 ſh 2 $\frac{2}{7}$ d the pound.

First I conſider that if 14 at London be 15 at Lions, 1 l at London is more worth than 1 l at Lions, as much as 1 l is heavier than the other, and therefore as 14 is to 15 ſo is 5 Franck. to the facit of the firſt worke: then I ſay, if 2 $\frac{1}{5}$ Frank. which is 5 ſh in Franck. bee 6 ſh ſterling, what is the firſt facit in working firſt multiply 2. $\frac{1}{5}$ viz. by 2. and add in 1 of 14. facit 35 for divider by abbreviating by 5 facit 7. likewiſe abbreviate 5 facit 1. then 6 times 15 is 90 for dividend.

(4.) If a ropa of ſugar at Madera coſt 1200 Reis, and the charges to ſend it to London is 400 Reis, and the exchange for London is at 77 d ſterling, the ducat of 400 Reis, the queſtion is how much the pound ſhall come to ſtand at London, when a ropa at Madera is 28 pound at London.

First set down the carriage of a ropa which is 28 l as is mentioned, then say, if 28 or a ropa cost 1600 reis, what doth 1 l then if 400 reis be 77 d what is the facit of the first worke? doe it thus, first cut off the two cyphers of 1600 and of 400, then 1 of 16 is 4 and 1 of 4 is 1 then the 1 of the remainder of 16 being 4 is 1. and $\frac{1}{4}$ of 28 is 7. remaines 7 for divider, and 77 for divident.

1200
400

28 . . 1600 . . 1
400 . . 77 . . —

44

Facit at 11 d the pound.

First if a ropa at Lisbone be 34 l at London, then 34 l at London cost 3 duckats, and 180 reis cost 1 l then if 400 reis be worth 72 d. what is the facit of the first worke, the worke thus, first cut off a cypher from 400 and from 180. then multiply the 40 left by 30 facit 1200 for divider, then multiply the 3 duckats by 400 reis, facit 1200. and add in 180 leaving out a cypher for the cypher of 400. facit 138 this cypher being away, then multiply the 138 by 72. over head, facit 5936 for divident.

(5) If a ropa of cotten at Lisbone cost 3 duckats, and the charges to send it to London is 180 reis, and the exchange for London is at 72 d sterling, the duckat of 400 reis, the question is in how much the pound doth come to stand at London, when a ropa at Lisbone is 34 at London.

34 . . 3 . 180 . . 1
400 . . 72 . . —

1360 138

Facit at $7\frac{1}{2}\frac{4}{5}$ d the pound.

5936
41

(6.) A

(6.) A merchant at Venice doth buy velvet for 46 d of Venice the ell of Venice, and to bring it to London the charges are 3 d of Venice on the ell, and 150 ells of Venice are 96 yards at London, the queſtion is in how much a yard doth come to ſtand at London, when the exchange is at 65 pence ſterling, the ducket of 24 pence.

First ſet down the price and carriage, facit 49 d of Venice, then ſay, if 24 d of Venice be 65 d ſterling, what is 49 d of Venice, and then as 69 is to 150. ſo is the facit of the firſt worke to the right facit: To worke it, firſt multiply 24 by 92. facit 2304 for divider, then multiply 49 and 15 together, facit 7350. then by 65. facit 477750 for divident, divide by the divider, facit 207 d divide by 12. facit 17 ſh. 3. 117 d. 313

46
3
24 . . 65 . . 49
96 . . — . . 150
2304 7350
65
207
477750
2692 2
8

Facit at 17 ſh $3\frac{117}{313}$ pence ſterling the yard.

(7.) A merchant at Hambourgh doth take up money by exchange for London at 8 marke 12 ſhillings Lubiſh, and for the ſame money he doth buy French crownes, for 42 ſh Lubiſh the crowne, which he doth ſend to London to pay the exchange, and at London he doth ſell them for 6 ſhillings $\frac{1}{3}$ d ſterling the crowne, the queſtion is how much he doth win or loſe per cento.

8.

8. 12 .. 240 .. 42
—— .. $72\frac{1}{2}$ .. 100

1008 | 725
252 | 140
100
11500
775
1

Facit he doth win $\frac{25}{36}$ per cento.

Here consider that in this kind that the second and third number of the first worke are now dividers, and in such like questions and the first number of the upper ranke, and the two latter numbers of the second rank are dividents: to worke it first cut off the cypher from 100. and another from 140. then 24 times 42 is 1008 for divider, then ten times $72\frac{1}{2}$ facit 725 then the 8 markes 12 sh into shillings, facit 140 then multiply 725 by 140. facit 11500 for divident, then consider that if 1015 of this number be divided by 1008. the quotus will be 1 and 7. rests 5 then you need divide no further, but onely prefix two cyphers for the other two places, then take the $\frac{1}{4}$ of 1008. and $\frac{1}{4}$ of 700. which is 175. then the $\frac{1}{7}$ of this for numerator, and 1 of 252 for denominator, so that the whole facit is 100.$\frac{25}{36}$ so that he doth win $\frac{25}{36}$ per cento.

(8.) If a pound of ginger at London cost two shillings one penny, and to send it to Dantzig the charges are 21 grosse polish on the hundred of Dantzig, the question is in how much the pound doth come to stand at Dantzig, when 100 pound of Dantzig are 90 pound at London, and the exchange be at 160 grosse polish the pound sterling.

100 . . 3. 1 . . 90

4 25
1 1
240 . . 160 . . —
6 4

Facit 15 groſſe poliſh.

100 . . 21 . . 1 *Facit* $\frac{21}{100}$ groſſe poliſh.

Facit at 15 $\frac{21}{100}$ groſſe poliſh.

Set downe your queſtion, and it conſiſteth of 3 rules of 3. the firſt is as 100 is to 90. ſo is the price of a pound of ginger greater than the price of a pound at Dantzig, the next worke, if 240 d be 160 groſſe, what is the facit of the firſt worke? and for the latter worke, if the carriage of 100 is 21 groſſe, what is the carriage of 1. to worke theſe, worke the firſt two rules together. firſt bring the 3 ſh 1 d into pence, facit 25. then ſay, the 1 part of 25 is 1. and 1 of $\frac{1}{25}$ $\frac{1}{25}$ 100 of 4. then the 1 of 4 is 1. and 1 of 16 is 4 then the 1 of that 4 is 1. and the 1 of 24 is 6. cutting $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ off the cyphers both of 240 and of 160 remaines 6 for divider, and 90 for dividend, which being divided by 6. facit 15 groſſe poliſh, then for the latter rule it is apparent it is 21 added $\frac{21}{100}$ to the 15 facit 15 groſſe 21 $\frac{21}{100}$

(9.) If a pound of ginger at London coſt one ſhilling eight pence, what did the hundred coſt at Venice, when the charges of one hundred weight at London to be brought from Venice is 18 ſhillings ſterling, and that 100 pound of Venice be at London 70 pound, and the exchange at 65 pence ſterling.

For the worke of this question, first say, if 112 of ginger cost 1 sh 8 d. what cost 70 l. then if 112 require 8 sh carriage, what doth 70. then if 65 sterling be one duckat, what is 1265. First to worke the first rule, consider that 1 sh 8 d is 20 d. and therefore multiply 7 by 2 facit 14 prefix the cypher of 70 and 20. facit 1400 d. and so much the 100 of Venice or the 70 l of London did cost, then for the middle worke or rule of 3, take the $\frac{1}{7}$ of 112 facit 16. and $\frac{1}{7}$ of 70 is 10, then the $\frac{1}{3}$ of 16 is 8 for divider, and $\frac{1}{3}$ of 18 is 9. and being shillings, it must be multiplied by 12 to bring it into pence, for 108 d which must be multiplied by 10 remains of 70 which I suppose I see stand before 108. then I divide by 8. facit 1350 d. which is the charge of bringing 100 from Venice, then I substract 135 d (which is the charge) from 1400 which is the whole price that the ginger doth stand him in, here remaines 1265 d. then say, if 65 d sterling be one duckat, what is 1265. to worke this take the $\frac{1}{5}$ of 65. facit 13. then take $\frac{1}{5}$ of 1265. facit 253. which divide by 13. facit 16. $\frac{6}{13}$

1 . . 1 . 8 . . 70 *Facit* 1400 pence

112 . . 18 . . 70

16 . . 108 *Facit* 135 pence.

8

65 . . 1 . . 1265

13 253

Facit $19\frac{6}{13}$ duckats.

(10.) If a L of pepper at London cost 34 d. and to send it to Noremberge the charges are 2 flotins on the centner of Noremberge, the question is in how much the pound shal come to stand at Noremberge, when 100 l of Noremberge are 116 at London, and that the exchange is at 46 d sterling.

First as 100 is to 116. so is 34 d to the price of a pound at Noremberge in English money, then I say againe, if 46 d bee 65 kar what is the facit of the first workings to worke this, multiply only by 16. and set it a place nearer the right hand the last number, viz. 2110. in the product of it selfe multiplied by 100 standing in the place of hundreds, added together facit 25636. and the cypher that should be there I leave out, and one of the cyphers of 100 remaines 10 and 46 to be multiplied together for divider, facit 450. as in example.

100 . . 34 . . 116

46 . . 65 . .

2210

3536

$55\frac{14}{115}$

25636

23

100 . . 2 . . 1

60

1|2

Facit at $56\frac{107}{115}$ kreutzers.

(11.) If

(11.) If one pound of saffron at Aquila cost 12 carlini 3 celli, and the charge to send it to London is 40 shillings sterling on the hundred weight of London, and 100 L of Aquila is at London 76 L. the question is in how much the pound doth come to stand at London, when the exchange is at 69 pence sterling for one duckat of 10 carlini, and 6 celli is one carlini.

76 . . 12. 3 . . 100 112 . . 40 . . 1

152 25 28 10

10 . . 69 . . — 7 2.6

76. 113 *Facit* $4\frac{2}{7}$ pence.

172507 *Facit* at 9 sh 9 $\frac{411}{573}$ d stz. the pound.

2034

573

First say, as 76 l is to 100. so is 12 sh 3 d to the price of a pound in sterling money, then if 10 Car be 69 d. what is the fa. it of the first worke: first considering that if 1 Car. be 6 Celli, then 3 Celli is $\frac{1}{2}$ Car. then bring the 12. $\frac{1}{2}$ into the fraction, facit 25. then carry the denominator to the first number, facit 152 for divider, then multiply the 25 by 69 facit 1725. then I should multiply by 100. then instead thereof I multiply by 10. and the other cypher doth ballance the 10 facit 17250. divide by the divider, facit 113. and 74 remaines, then I take the $\frac{1}{3}$ of it, facit 34. $\frac{1}{3}$ of the divider, facit 76. so the fraction is $\frac{74}{76}$ and then I cast up the carriage of a pound and in working I take the $\frac{1}{4}$ of 112. facit 28, and the $\frac{1}{4}$ of 40. facit 10 and the $\frac{1}{4}$ againe, then I divide 2 sh 6 d by 7. facit 4. $\frac{2}{7}$ the carriage added to the 113. $\frac{34}{76}$ d. facit 9 sh 9. $\frac{411}{573}$ d as in example.

(12.) If a cloth content 30 yards cost at London 11 l. and the charges to send it to Lisbone is 18 sh sterling, and 5 yards at London are foure varras at Lisbone, and the exchange is at 72 d sterling, the question is in how much the varras doth come to stand at Lisbone, when the disma must be paid at Lisbone.

27 . . 11 . 18 . 1

238

4 . . 5 . . —

6 . . 1 . . —

648

Facit at $1\frac{271}{324}$ duckats.

XXC

542

The diſma at Lisbone is the tenth cloth, or the like, which the King hath of all commodities, ſo he having 3 of 30. remaines 27. then if 27 coſt 11 l 18 ſh. what ſhall 1. that facit ſhewes the price of a cloth ſterling money, but hee would know what a varras doth come to, which muſt needs be more, becauſe 5 yerds make but 4 varras, and therefore I ſay, as 4 is to 5 yards, ſo is the price greater than the former facit, and ſo we know what it ſtands in of that money, and therefore I ſay, if 6 ſh which is 72 d be one duckat, what is the laſt facit of the worke? multiply the 27–4–6 times, facit 648 for divider, then 11 l 18 ſh 1 bring into ſhillings, facit 238. multiplied by 5 facit 1190 for divident.

QVESTIONS

QVESTIONS OF Reducing the Meaſure of one Countrey into the Meaſures of another.

(1.)

IF 45 ells at London be 75 ells at Antwerpe, and 55 ells at Antwerpe be 30 ells in France, how many ells of France make 100 ells at London.

45 . . 75 . . 1
55 . . 30 . . ---
1 . . ---- . . 100

495 — 45000
99 — 9000
11 — 1000

Facit $90\frac{10}{11}$ ells.

Firſt take the $\frac{1}{7}$ of 55. facit 11. then the $\frac{1}{7}$ of 30. facit 6. then 11 times 45 is 495 for divider, then 6 times 75 is 450. mukiplied by 100 done by preſixing two cyphers, facit 4500 for dividend, then take the $\frac{1}{5}$ of your divider, &c likewiſe of your divident, then the $\frac{1}{5}$ of your divider, and $\frac{1}{5}$ of your dividend, as in example.

(2.) If 3 yards at London be 4 ells at Antwerpe, and 104 ells at Antwerpe be 300 palmes at Genua, how many palmes of Genua make 50 yards at London.

3 . . 4 . . 50
104 . . 300 . .

20000
2500

Facit $192\frac{4}{13}$ palmes.

Firſt I ſay $\frac{1}{3}$ of 3 is 1. and $\frac{1}{7}$ of 300 is 100 then ſay, 4 times 5 is 20. preſix 2 cyphers, the cypher of 50 and the cypher of 100. facit 2000 for dividend, which divide by 8 and 13 becauſe that 8 times 13 is 104.

(3.) If

(3.) If six hundred ells at London be 884 palmes of Genua, and 721 palmes of Genua be 321 braces at Millan, and 128 braces at Millan be 111 canaes at Rome, how many canaes at Rome make 100 ells at London.

The setting down of this question is somewhat easie, but the worke is somewhat hard, for the two cyphers ballance each other, then I multiply the 721 by 6 of 600. and set it under the line, facit 4326. then multiply this 4 by 4 times 107. because 4 times 107 is 428. and first by 4. facit 17304. this I multiply by 7. facit 121128 this I multiply by 100. and add the next line above it unto it in this manner: First I say under the line I bring down 28, and to the third place which is 1 I add the first figure to the right hand of the next line above it, which is 4, saying 4 and 1 is 5. 1 and a cypher is 1. then for the middle numbers, and first I multipy 2884 by 21 the 2 of the figures of 321. facit 60564. this I multiply by 300. first bringing downe the first two figures, viz 6 and 4. then for the third figure to the left hand which is 5 before I bring downe that, I multiply the upper number by 3. saying 3 times 4 is 12 and 5 is 17 &c. of the rest facit 925764. this I multiply by 111 at once in this manner, saying once 4 is 4 then once 6 is 6. and 4 is 10. set downe the cypher, and carry 1. then once 9 is 7 and 1 in mind is 8 and 4 is 12 and 6 is 18. set downe 8 and carry 1. always removing one figure forward toward the left hand, and adding the last two figures forward toward the left hand, and adding the last two figures unto it, facit 102759804 for divident, divided by the divider, facit 55. 1

600 . . 2884 . . 100
721 . . 321 . . —
428 . . 111 . . —

4326 60564
17304 925764
121128

1851528 *Facit* 55 1/3 canaes.

102759824
20518346
9257

(4.) If

(4.) If 125 yards at London be 208 elles at Cullen, and 625 elles at Cullen be 500 ells at Antwerpe, and 55 ells at Antwerpe be 30 ells in France, and 571 elles in France be 625 varras at Madera, and 125 varras at Madera be 120 varras at Lisbone, how many yards at London be 1000 varras at Lisbone.

This question may be done diverse wayes, and the same way and the same facit will come by taking the parts, and ballancing one another.

120 .. 125 .. 1000
625 .. 571 .. ——
30 .. 55 .. ——
500 .. 625 .. ——
208 .. 125 .. ——

2496 6875
29952 391875

Facit 1 31 0 $\frac{9545}{14976}$ yards.

39256250
30463
181
9

Q QVESTI-

QVESTIONS OF Carriage from place to place.

(1.)

IF the carriage of 126 L. 20 mile coſt 6 ſhillings, how much ſhall be carried 75 miles for 10 pound.

For the firſt work multiply 75 by 6 facit 450 for divider, then cut off the cyphers and there remaines 45 for divident, then cut off the cypher from 20. remaines 2 for divider, then for the ſecond worke ſay, if 22 1/2 ſh pay for carriage of 126. what will 10 l pay for? Firſt bring 22.1/2 into halfes, facit 45 ſixpences,

20 . . 6 . . 75

450

Facit 22 1/2 ſhillings.

22 1/2 . . 126 . . 10

45 80 40

9 10080

Facit 1120 pound.

then the 10 l ſhould be multiplied by 20 to bring it into ſhillings, but to make it like the firſt, viz ſixpences, I muſt multiply it by 40 becauſe 40 ſixpences make one pound, I place 40 under 10 to multilpy it withall, but to ſhorten the worke, I take the 1 of 45 facit 9 for divider, then for that I take 1 of 10. facit 2. then 2 times 40 is 80. with which I multiply 126. facit 10080 for divident.

(2.) If the carriage of 100 L 15 mile coſt 5 ſh 4 d what coſt the carriage of 625 L 40 mile.

15 . . 5 . 4 . . 40
100 . . ----- . . 625

3 2500
50

12.10.---
---.16.8

13. 6. 8

Facit 14. 8. $10\frac{2}{3}$

First cut off the cyphers from 100. and another from 40 to ballance it, then multiply 625 by 4. facit 250. from which cut off one cypher, & another from the other remaining of 100. then take the $\frac{1}{3}$ of 15. facit 3. and $\frac{1}{3}$ of 250. facit 50. which caſt up at 5 ſh 4 d. firſt for 3 ſh take $\frac{1}{3}$ of 50. facit 10. then conſidering that 4 d is $\frac{1}{3}$ of a ſhilling, wherefore I take the $\frac{1}{3}$ of it, and placing it among the ſhillings, facit 16 ſh 8 d. added together, facit 13 l 6 ſh 8 d. for divident, divide by 3 facit 4 l 8 ſh 10. 2 d. $\frac{1}{3}$

A QVESTION OF a Debter that doth compound for his Debt.

(***)

Considering 13 ſh 4 d wants 1 of a l, therfore ſubſtract the 1/3 part from 357 l 17 ſh 11 d & the remainder is the facit, as in example.

A Merchant hath owing 357 pound 17 ſhillings 11 pence, and his debter doth agree with him to pay for every pound but 13 ſhillings 4 pence, the queſtion is how much he muſt pay him in all. Anſwer. Such reaſon as one pound hath to 13 ſhillings 4 pence, ſuch reaſon muſt the debt have to the money which the muſt pay for he ſaid debt.

1 . 13 . 4 . . 357 . 17 . 11
119 . 5 . 11 1/3

Facit l 238 . 11 . 11 1/3

A QVESTION OF an ill debters beſt offer.

A Merchant hath money owing, and his debter doth offer to pay him with Philippus dallers at 5 ſhillings the peece, which are worth but 4 ſhillings $11\frac{1}{3}$ d. or with French Crownes at 6 ſhillings the peece, which are worth but 5 ſhillings $11\frac{1}{4}$ d. the queſtion is, whether it be better to receive the Dallers or the Crownes. Anſwer. Find the value of the Daller after the rate of the Crowne, or the value of the crowne after the rate of the Daller, &c.

Conſidering that 5 ſh doth want but 1 of it to make it equall with the third $\frac{1}{7}$ number, and therfore the middle number having the 1 added to it $\frac{1}{7}$ is the facit as in example.

5 . . 4 . $11\frac{1}{3}$ . . 6

— . $11\frac{9}{78}$

5 . $11\frac{3}{7}$

Facit it is better to receive the Dallers.

QVESTIONS OF *TAPISTRIE.*

(1.)

IF one ell of tapistrie cost 2 sh 4 d. what cost one peece of $3\frac{1}{2}$ elles long and $2\frac{1}{4}$ elles broad.

If one cost 2 sh 4 d. the $\frac{1}{2}$ must needs cost 1 sh 2 d. and for 3 ells 1 multiply 2 sh 4 d. and add in the 1 sh 2 d. facit 8 sh 2 d. and the question were done if the $3.\frac{1}{2}$ ells were ell broad, but it is $2.\frac{3}{4}$ ell broad, and therefore I must place 8 sh 2 d again — for the 1 ell broad 4 sh 1 d $\frac{1}{2}$ for the 1 2 sh 1 d. $\frac{1}{4}$ add all together, facit 22 sh $5.\frac{1}{2}$ d.

1 . . 2 . 4 . . $3\frac{1}{2}$ . . $2\frac{1}{4}$

1 . 2

8 . 2
8 . 2
4 . 1
2 . $\frac{1}{2}$

Facit 22 sh $5\frac{1}{2}$ d.

(2.) If a peece of tapistrie $4\frac{1}{2}$ ells long and 3 ells broad cost 2 l 3 sh 5 d. what cost another peece of the same goodnesse, being long $7\frac{1}{4}$ elles and $5\frac{1}{3}$ ells broad.

$4\frac{1}{2}$ . . 3 . . 2 . 3 . 5 . . $7\frac{3}{4}$ . . $5\frac{1}{2}$

9 $2\frac{7}{12}$ 11

28.8. 4
28.8. 4
4 14.$8\frac{2}{3}$
----. 2.4$\frac{5}{11}$

61.13.$9\frac{1}{12}$

Facit 16.17.$1\frac{1}{11}\frac{1}{88}$

In ſuch queſtions as theſe are, ordinarily you ſhould multiply the length by the breadth, firſt I bring the $4\frac{1}{2}$ into the fraction 9. this ſhould bee multiplied by 3 the breadth, but inſtead thereof I divide one of my dividers, viz. $7\frac{3}{4}$ facit 20. $\frac{7}{15}$ then I bring the laſt number into the fraction 11 and becauſe that the firſt and laſt denominator are 2. I need not carry them, then I ſhould multiply 2. $\frac{7}{12}$ by 11. ſaying 11 times 7 is 77. which is $\frac{5}{12}$ and carry 6. then 11 times 2 is 22. and 6 is 28 which is one for one pound of the middle number, then as much more for the other pound, for 3 ſh 4 d the 1 and for 1 d conſidering that 28 18 ſh 4 d is 28. $\frac{0}{12}$ added together, facit 61—13—9. $\frac{1}{12}$ divided by 9.

(3.) If one ell of tapiſtrie coſt 3 ſh 5 d. what coſt 3 peeces content ells $4\frac{1}{2}$ long 3 broad, $5\frac{3}{4}$ long $4\frac{1}{2}$ broad and $6\frac{1}{2}$ long $4\frac{2}{3}$ broad.

1 . . 3 . 5 . . $4\frac{1}{2}$. 3 . . $5\frac{3}{4}$. $4\frac{1}{2}$ . . $6\frac{1}{2}$. $4\frac{2}{3}$

$13\frac{1}{2}$
$25\frac{7}{8}$
$30\frac{1}{3}$

$69\frac{17}{24}$

11.12.$4\frac{1}{3}$
----. 5.$9\frac{17}{24}$

Facit 11.18.$2\frac{1}{24}$

Firſt multiply the length by the breadth of every one, then add all together, facit 69—17. then I conſider that if one coſt 20 ſh. then 69 17 will coſt $\frac{17}{24}$ 69. 17 the 1 ſh is $\frac{17}{24}$ 1 d. and the $\frac{11}{12}$ muſt needs be 20 times as much, which is 10 d. ſo that the 69 17 is 69—14 2 which you muſt imagine you ſee, for 3 ſh 4 d take the 1 and for the d. conſider that 69. 17 d is 5 ſh 9. 17 d. which added together, facit 10 l 18 ſh 2. $\frac{1}{24}$ d.

QVESTIONS OF BUYING AND SELLING respecting Tare.

(1.)

A Merchant doth buy three bags of Allume, poiz. 3 C 6 L, 3 C 13 L, 3 C 1 qr. tara, $5\frac{1}{2}$ L, 6 L, $6\frac{1}{4}$ L at 34 ſhillings the hundred netto, the queſtion is to how much they amount in money.

First ſet down the weight of the 3 bags, and add them together, facit 9 C. 1 qr. 19 l. tara $17\frac{3}{4}$ being deduced, facit 9 C 1 qr 1. $1\frac{1}{4}$ l. then ſay 9 times 4 is 36 ſet down 6 and carrie 3. and becauſe the next number is an odd number, I ſay 9 times 1 is 9 and 3 is 12 angles, which is 12 l. ſet downe a cypher and carry 6 l. then once 9 is 9. and 6 is 15. then for the $\frac{1}{4}$ of the laſt quotus for 7 l. and then I take the $\frac{1}{4}$ of that for 1 l. and then for the $\frac{1}{4}$ the $\frac{1}{4}$ of the laſt, as in example.

$5\frac{1}{2}$	3	—	6
6	3	—	13
$6\frac{1}{4}$	3	1	—
	9	1	19
	—	—	$17\frac{1}{4}$

1	34	9 . 1	$1\frac{1}{4}$
		15 . 6	—
		— . 8	6
		— . x	$\frac{x}{2}$
		— . —	$3\frac{9}{14}$
		— . —	$\frac{5}{16}$
Facit		15 . 14	$10\frac{11}{16}$

(2.) A merchant doth buy a bale of madder weighing 7 C 3 qr. 8 L tara and cloſſe 4 per cento, at 43 ſh 6 d the hundred weight netto, the queſtion is how much it doth amount to in money.

100 . . 96 . . 7 . 3 . 8
1 . . 43.6 . .---------
15 . 4 . 6
1 . 1 . 9
---.10.10½
---. 3 . 1 3/7
17 ---. 2 11/14.275
3 . 8 . 39/56
---.13. 7 109/280
Facit l 16. 6 . 7 166/350 | 81/175

First say if 100 come to 96. what will 7–3–8 come to according to that rate, then againe, if 1 C come to 43 sh 6 d. what will the facit of the first work, which is the netto weighe after the tret is deduced: to work it first cast up the 7 C at 4: sh 6 d saying 7 time: 6 is 42 which is 5 sh 6 d. then for the 1 of C take the 1 of 43 sh 6 d. and for the 1 C 1 of that, and for 6 l which is 1 of 1 C take the 1 of 1 l 1 sh 9 d, add all together, facit 17–2.11 then consider 100 is more than 96 by 4. which is 1 and therefore you must take away the 25 part of 17–0–2.11 d. and it is done by dividing it twice by 5.

(3.) A merchant doth buy two bags of allume for 15 l. poiz 6 C 1 qr. 4 L, 5 C 3 qr. tara 6 per cento, the question is in how much the hundred netto doth come to stand.

6 . 1 . 4
5 . 3 .---
12 .---. 4 . . 15 . . 1
28 28
337 140
94 . . 100 . . ----
Facit at l 1 . 6 . 6 110/1839
31678
4200004
X03222 6
216446
8379
64
3

First add the two bags together, facit 12. and 4 l if that cost 15 l. what shall 1. First bring the 12 C 4 l into 4 l. which is done by multiplying the hundred by 28. and add in 4 l. accounting it as one, facit 337. and the other hundred into 4 pound weights facit 28. then multiply this 28 by 15. multiply only by 5. and set it a place nearer the right hand, and then add the 28 and the product of 5 together, and it is as good as if it had beene multiplied by 15. facit 420. then prefix two cyphers for 100 because that it should be multiplied by 100 facit 4200 for dividend, and then divide by your divider, as in example.

(4.) A

(4) A merchant doth buy two barrels of Spanish sope poiz 3 C 2 quarters 7 L. 3 C 2 quarters 13 L tara 11 per cento, at $36\frac{1}{4}$ shillings the hundred netto, the question is to how much they do amount in money.

First set down the weight of the two barrels, facit 7 C 20 L then say, if 100 make but 89. what will 7 C 20 l make: and againe if one hundred be worth $36\frac{1}{4}$ sh. what is the facit of the first worke: to worke this, first say 9 times 36 sh is 1614 sh. then multiply 36 by the $\frac{1}{2}$ of 8. and add to the 1614 sh. for it is a generall rule to multiply your shillings by the last figure, and then by the $\frac{1}{2}$ of the rest of the figures, facit 1601 4 sh. then for $\frac{3}{4}$ d take 8 parts of 89 facit 1 l 2 sh. 3 d then add all together, facit 161 l 6 sh 3 d then mukiply 161 l 6 sh 3 d by 7. saying 7 times 3 is 21, &c. facit 1129 l 3 sh 9 d. so much the 161 l 6 sh 3 d came upon multiplying by 7 l then for 16 l of the 20 l take the $\frac{1}{8}$ of 161 l 6 sh 3 d. and for 4 l the $\frac{1}{4}$ of that, facit 5 and $\frac{5}{8}$ 15 2. 10 all added together, facit 1157 l 19 sh 10. $\frac{11}{8}$ which divide by 100 as in example, facit 11 l 11 sh 7 d.

3 . 2 . 7
3 . 2 . 13

100 . . 89 . . 7 . — . 20
1 . . $36\frac{1}{4}$ . . — — — — —

160.4. — .1129.3 .9
1.2.3 23 . — .$10\frac{5}{7}$

161.6.3 5 .15 .$2\frac{19}{28}$

Facit l 11 | 57.19.$10\frac{11}{28}$
sh 11 | 5 9
d 7 | 18

A QVESTION OF BVYING AND SELLING by Avoir-du-pois Weight, and Suttell Weight.

IF one hundred weight of allume be ſold for 31 ſhillings 8 pence, and one hundred ſuttell for 31 ſhillings 2 pence, at what price is the hundred weight ſold for one with another.

First I ſet downe the 2 C both ſuttell and great added together, facit 212. abbreviated by 4 facit 53. the third number 112 I alſo abbreviate by 4. facit 28. then I multiply the middle number by 28 at twice, viz. by 4 and 7. as in example, and divide by 53.

112	31. 8	
100	31. 2	
212 . .	62. 10 . .	112
53	251. 4	28

Facit at 33 ſh $2\frac{18}{53}$ d.

X759. 4
X60 8
12
1

QVESTIONS

A QVESTION OF BVYING AND SELLING Wares at ſeverall prices, and yet of one ſort as much as another, for a ſumme of money knowne.

A Merchant will beſtow 183 l in ſpices, to ſay in Cloves at 4 ſh 2 d the pound, Maces at 7 ſh 6 d the pound, Cinamon at 3 ſh 8 d the pound, Nutmegs at 12 ſh 3 d the pound, Pepper at 2 ſh 10 d the pound, and he will have of one ſort as many pound as of another, the queſtion is how many pound he muſt have of each ſort.

First I place all my prices one under another, added together, facit 30 ſh 5 d. which then I ſay, if 30 ſh 5 d done by 1 of each ſort, what will 183 buy? firſt I bring the 30 ſh 5 d into pence, facit 365. abbreviate by 5. facit 73. the third number ſhould bee multiplied by 240 to bring it into d. but inſtead thereof I multiply it by 1 of 240. which is 1/240. becauſe the firſt number was abbreviated by 5. as in example.

4. 2
7. 6
3. 8
12. 3
2. 10

30 . 5 . . 1 . . 183
365 48
73

Facit $120\frac{24}{73}$ pound.

8784
142

QVESTIONS

QVESTIONS OF Exchange between *London* and *Antwerpe*.

(1.)

A Merchant at London doth deliver 200 l ſterling by exchange for Antwerpe at 23 ſh 5 d. flz the pound ſterling, the queſtion is how much he muſt receive Flemmiſh at Antwerpe.

Conſider that if 1 l bee 23 ſh 5 d. 200 l is 200. and for 3 ſh 5 d l take the 1 of 200. which is 33 l 6 ſh. 8 d. and then 200 d is 16 ſh. 8 pence, all which added together, facit 234 l 3 ſh 4 d.

1 . . 23 . 5 . . 200

33. 6. 8

---. 16. 8

Facit l 234. 3. 4 flz.

(2.) A merchant at London doth receive a bill of exchange from Antwerpe of 300 l ſterl. for the value delivered there at 22 ſh 8 d flz. for one pound ſterl. the queſtion is how much Flemmiſh money was delivered at Antwerpe.

Conſider 20 ſh is one pound, 2 ſh 1 L and 8 d the ⅓ of 2 ſh.

1 . . 22. 8 . . 300

30

10

Facit l 340. ---. --- flz.

(3.) A

(3.) A merchant at London doth receive a bill of exchange from Antwerpe of 150 l sterling, and is for 178 l Flemmish delivered there, the question is at what price it was delivered.

150 . . 178 . . 1

5 356

1 118 . 8

Facit at 23 sh $8\frac{4}{5}$ d Flemmish.

I should multiply the middle number by 20 to bring it into shillings, but I multiply it by 2. and divide the first number by 10. which is done by cutting off the cypher of 150. then I take the $\frac{1}{3}$ of 15. and the remainder which is 5. and the $\frac{1}{3}$ of 356. facit 118 sh 8 d. then I take $\frac{1}{5}$ of 5. and $\frac{1}{5}$ of 118–8 which is the facit to the question.

(4) If the exchange from Antwerpe to London go at 23 sh 2 d fl. for one pound sterl. how much money must I deliver at Antwerpe to receive at London l 143. 17. 8 sterl.

1 . 23 . 2 . . 143 . 17 . 8

14 . 7 . $9\frac{1}{5}$

7 . 3 . $10\frac{3}{5}$

1 . 3 . $11\frac{23}{30}$

Facit l 166 . 13 . $3\frac{17}{30}$ fl.

Consider that the third is for 20 sh. then for 2 sh take the $\frac{1}{10}$ of the last number, and for 1 sh the $\frac{1}{3}$ of that, and for 2 d the $\frac{1}{6}$ of the last, as in example.

(5.) A merchant at Antwerpe doth receive a bill of exchange from London of 100 l Flemmish, and is for 87 l sterling delivered at London, the question is at what price the pound sterling was delivered.

87 . . 100 . . 1

Facit at 22 sh $11\frac{25}{29}$ d Flemmish.

First bring your 100 l. into shillings, and divide it by 87.

20002

2665

283

06

17

(6.) A

(6) A merchant at Antwerpe doth deliver 200 flem. by exchange for London at 22 sh 10 d fiz. for one pound sterling, the question is how much he must receive at London sterling.

First I bring the 22 sh 10 d into two pences by multiplying the 22 by 6. and accounting the 10 d for 5 facit 137. then I bring the 200 into the like kind, viz. into twopences, by multiplying it by 120 the product whereof I divide by 137. as in example.

22 . 10 . . 1 . 200
6 120

137 *Facit* l 175.3.7 $\frac{109}{137}$ sterl.

240000
103159
7208
1589
06
10

(7.) A merchant at Antwerpe doth receive a bill of exchange from London of 1841 fiz. for the value delivered there at 23 sh 3 d fiz. the pound sterling, the question is how much sterling money, was delivered at London.

First I bring the number into three pences, and therefore I multiply the third number by 80 by the 3 pences of a pound the product whereof I divide by 93 as in example.

23 . 3 . . 1 . . 184
4 80

93 *Facit* l 158. 5. 7 $\frac{1}{11}$ sterl.

147200
54765
7220
559
66

(8.) A

First bring the first number into d. and into the fraction, facit 1127 for divider, bring the third number into pence, facit 35467. then bring the denominator 4 thus, then say, 4 halfes is 2. then 4 times 7 is 28 and 2 is 30. facit 241870 for dividend.

(8.) If the exchange from London to Antwerpe go at 23 sh $5\frac{1}{4}$ d Flemmish the pound sterling, how much money must I deliver at London, to receive at Antwerpe l 147 . 15 . $7\frac{1}{2}$ Flemmish.

23 . $5\frac{1}{4}$ . . 1 . . 147 . . 15 . $7\frac{1}{2}$

281 — 2955

1127 — 35467

Facit l 125 . 17 . $7\frac{1003}{1127}$ sterling.

241870
29135
6690
2963
874
889
100

Questions of Exchange betweene London *and* Hambourgh.

Suppose it to be 9 marks, and then 500 l will be 4500 marks, but it wanteth 500 sh of so much, and therefore I divide 500 by 16. and the quotus is 31 markes 4 sh. which I substract from 4500 marks, and the right facit to the question is 4469 marks 12 sh.

(9.) A Merchant at London doth deliver 500 l sterl. by exchange for Hambourgh at 8 marke 15 sh Lubish the pound sterl. the question is how much he shall receive at Hambourgh, when 16 sh is one marke and 12 d one sh Lubish.

1 . . 8 . 15 . . 500

4500.---

31.4

Facit marks 446.8 sh. 12 d --- Lubish.

(10.) A

(10.) A merchant at Hambourgh doth deliver 8000 marke Lubiſh by exchange for London, at 8 marke 12 ſh Lubiſh the pound ſterl. the queſtion is how much he muſt receive at London ſterl.

First conſider that 8 markes 12 ſh is 8 ½ markes, and therefore I bring both the firſt and third number into parts, then I take the 1/2 both of the firſt and third number, then I divide the third number by the firſt.

8 . 12 . . 1 . . 8000
4 4
35 32
7 6400

Facit 1914 . 5 8 4/7 ſterl.

(11.) A merchant at London doth receive a bill of exchange from Hambourgh of 250 l ſterling, for the value delivered there at 8 marke 13 ſh 4 d for one pound ſterling, the queſtion is how much was delivered at Hambourgh Lubiſh.

Multiply 250 by 8 markes facit 2000 then conſidering that 8 ſh is the 1/2 of a mark, wherefore I take the 1/2 of 250 for that, &c. 4 ſh is the 1/3 of 8 ſh. and 1 ſh 4 d the 1/3 of 4 ſh. and in that manner it is wrought, as in example.

1 . . 8 . 13 . 4 . . . 250

2000 . — . —
125 . — . —
62 . 8 . —
20 . 13 . 4

Facit markes 2208 ſh 5 d 4 Lubiſh

(12.) A merchant at London doth receive a bill of exchange from Hambourgh of 175 pound ſterling, and is for 700 dallers at 31 ſhillings Lubiſh the daller delivered at Hambourgh, the queſtion is at what price it was delivered.

Take 1 of the first and second number, then I take the 1 of the quotus againe both of the first and second number, and then 1 both of the first and second number, and then the question stands thus, if 1 l sterling make 4 dallers, what will 1 l sterling make? then I consider 4 times 31 is 8 times 16 wanting but 4. and so I set downe for the facit 8 marks wanting 4 sh as in example.

175 . . 700 . . 1
35 140
7 28
4
31

Facit at markes 7 sh 12 Lubish.

(13) A merchant at Hambourgh doth receive a bill of exchange from London of 1500 dallers at 31 sh Lubish the daller for the value delivered at London at 8 marke 14 sh 6 d Lubish the pound sterling, the question is how much was delivered at London sterling.

8 . 14 . 6 . . 1 . . 1500

142
285
57
19

31

Facit 1326 . 6 . $3\frac{15}{19}$ sterling.

620002
52665
1227
1

Considering 65 kar. is 1. 1 florin being reduced, make 13. then I should multiply the middle number by 20 to bring it into shillings, but instead thereof I divide 2000 by 20. facit 100 which I multiply by the supposed denominator of the third number, facit 1200 for divider, and the middle number being multiplied by the reduced third number 13 makes the dividend.

(14.) If the exchange from London to Hambourgh go at 8 marke 14 sh $11\frac{1}{4}$ d Lubish, how much money must I deliver at London to receive at Hambourgh 984 marke 11 sh $9\frac{1}{4}$ pence Lubish.

8 . 14 . 11¼ . . 1 . . 984 . 11 . 9¼

142 — 15755 — 189069

1715 — 6861 — *Facit* l 110.4.6 $\frac{1032}{1787}$ sterl.

Bring the 8 marke 14 sh 11.1 d into pence, and into the fraction, facit 6861 for divider, then bring the third number into pence, facit 189069 then bring the denominator of the first number and say, foure times ¼ is 1 d. facit 756279 for the divident, as in example.

7562790
701686
253332
31966
4332
70
6

(15.) If the exchange from Hambourgh to London go at 8 marke 13 sh 5½ d Lubish for one pound sterl. how much money must I deliver at Hambourgh to receive at London l 137. 8. 7½ sterl.

1 . . 8 . 13 . 5½ . . 137 . 8 . 7½

1 . 8 $\frac{7}{8}$

6 . 10¾

1099 . 7 . 2¾

68 . 11 . 5¾

34 . 5 . 8 $\frac{7}{10}$

8 . 9 . 5 $\frac{7}{40}$

2 . 13 . 9 $\frac{29}{40}$ — 128

— . 11 . 5 $\frac{69}{160}$ — 138

— . 5 . 8 $\frac{219}{320}$ — 495

Facit markes 1215 sh — d 9 $\frac{15}{64}$ Lubish.

First consider that if 1 l be 1 marke, 137 l 8 sh 7.1 d is 137 marks, and that part of a marke as 8 sh 7.1 is of a pound, and because a marke is 1 part lesse than a pound, therfore 8 sh 7.1 d have the 1 part of it taken away is turned into parts of markes, so that 137 l 8 sh 7.1 d doth make 137 markes, 6 sh 10.4 d, so much the facit would have beene if it had beene 1 marke in the middle number, but being 8 markes, it must be 8 times so much, then therefore take 8 sh 4 d 1 sh 4 d. 1.1 as in example.

(16.) If a daller at Hambourgh be worth 5 ſh Flemmiſh, or 31 ſh Lubiſh, and that the exchange from Hambourgh to London doth go at 8 marke 13 ſh 6 d Lubiſh, at what price muſt it then go in Flemmiſh money, when Lubiſh money to bee bought is worth 6 d Flemmiſh in one l Flemmiſh more than Flemmiſh money, that one exchange may be as good as another.

First conſider that 4 dallers are 20 ſh Flemmiſh, therefore firſt I place 4 dallers, and multiply them by 31. facit 124. then if 124 Lubiſh be 20 ſh 6 d Flemmiſh, what is 8 markes 13 ſh 6 d. then conſider that if the firſt were one ſhilling, and that 1 ſh did coſt 20 ſh. then 8 markes 13 ſh be 141 ſh. would coſt 141. and if 1 ſh be 1 l. then 6 d is 10 ſh. ſo that the eight marks 13 ſh 6 d will be 141–10 ſh then for 6 d take the $\frac{1}{40}$ of 141–10 ſh. added together, facit 145–9 d divided by 124 facit 1 l. which I place for it, becauſe I purpoſe to expreſſe the facit by ſhillings, the remainder I multiply by 20. and divide againe, facit 3 more, and ſo forth.

4 . . 20 . 6 . . 8 . 13 . 6

124 — 141 . 10 . —

3 . 10 . 9

Facit 23 ſh $4\frac{89}{124}$ d fiz.

145 . — . 9

2905

4289

4

5

(17.) If a daller at Hambourgh be worth 31 ſh Lubiſh, or 5 ſhillings Flemmiſh, and that the exchange from Hambourgh to London doth go at 23 ſh 5 d fiz. at what price muſt it then go in Lubiſh money, that one exchange may be as another, when Lubiſh money to be bought is worth 5 d Flemmiſh in one pound Flemmiſh more then Flemmiſh money.

20 . 5 . . 4 . . 23 . 5

245 31 281

124 6744

142 . 2

348448
20355
56
1

Facit at 8 marke 14 ſh $2\frac{113}{245}$ d. Lubiſh.

This queſtion is done much like the laſt 23 in example, for the 20 ſh 5 d I conſider 245 the middle number is multiplied by 31 the third number into pence like the firſt, facit 281, which is multiplied by 124 at once, multiplying the 281 by 24 placing the product two places nearer the right hand.

Queſtions of Exchange betweene London *and* Dantzig.

(18.) A Merchant at London doth deliver 200 l ſterling by exchange for Dantzig at 160 groſſe poliſh the pound ſterling, the queſtion is how much he muſt receive at Dantzig poliſh when 30 groſſe is one florin poliſh.

1 . . 160 . . 200

1000 . —
66 . 20

Facit 1066 flo. 20 groſſe.

Multiply the 200 l by 5. facit 1000 florins, then becauſe 10 groſſe is 1 florine take $\frac{1}{3}$ $\frac{1}{7}$ of 200. facit 66. and 20 groſſe, which added to the former, facit 1066 florin 20 groſſe.

(19.) A merchant at Dantzig doth receive a bill of exchange from London of 3000 florins, for the value delivered there at 160 groſſe poliſh the pound ſterl. the queſtion is how much was delivered at London ſterling.

I cut off the last cypher of the third and first number, and then remaines 300 for the third number, this 300 should be multiplied by 30 to bring it into grosse, but instead thereof I multiply by 15 and divide by $\frac{1}{2}$ of 16. as in example.

160 . . 1 . . 3000
8 15
4500
Facit 1562 . 10. — sterl.

Divide 1244 by 60 and by 4. because that 4 times 60 is 240. and in dividing by 60 there remains 44. which should bee multiplied by 30 and divided by 60 but I consider if I should so do, it would yeeld but $\frac{1}{2}$ so much, and therefore without working I set downe the $\frac{1}{2}$ of 44. which is 22. and then I divide by 4. as in example you may perceive.

(20.) A merchant at London doth receive a bill of exchange from Dantzig of 240 1 sterl. and is for 1244 florins delivered there, the question is how much was delivered at Dantzig for one pound sterling.

240 . . 1244 . 1
20. 22
Facit 5 flo. 5 $\frac{1}{2}$ grosse polish.

I consider that 159 grosse is 5 florin 9 grosse, therefore first I multiply 500 by 5 facit 2500 florin, then for 6 grosse which is 1 florin, I take the $\frac{1}{6}$ of 500. and for 3 grosse the $\frac{1}{3}$ of that.

(21.) A merchant at London doth receive a bill of exchange from Dantzig of 500 1 sterl. for the value delivered there at 159 grosse the pound sterl. the question is how much money was delivered at Dantzig polish.

1 . . 159 . . 500
2500
100
50
Facit 2650 florins.

(22.) A

(22.) If the Exchange from Dantzig to London go at 158 groſſe 2 ſh poliſh for one pound ſterl. how much money muſt I deliver at Dantzig to receive at London 153 l 13 ſh 4 d ſterl. when one flo. is 30 groſſe, one groſſe 3 ſh. one ſh 6 d.

1 . . 158 . 2 . . 153 . 13 . 4

764 . 10 . —
30 . 22 . —
10 . 7 . 1
3 . 12 . 1 . 2

Facit florins 812 . 21 . 1 . 2

First I conſider that 158 groſſe and 2 ſh is 5 florin, I conſider 8 groſſe, and then for the 5 florins I conſider, that if 1 make 5 times 2 d $\frac{2}{3}$ of a florin, and therefore firſt I conſider what the 2 d of a florin is, $\frac{2}{5}$ which I find to be 20 groſſe, which I multiply by 5. facit 100 groſſe, which is 3 florins 10 groſſe, therefore I ſet downe the 10 groſſe and carie 3 and then I multiply the 153 by 3 and add in the 3. facit 768 florins 10 groſſe, then for 6 groſſe I take the 1 of 153. facit 30 florin 22 groſſe, and for 2 groſſe the $\frac{1}{3}$ of the quotus of 6 groſſe, and for 2 ſh the $\frac{1}{3}$ of the quotus of 12 groſſe as in example.

(23.) A merchant at Dantzig doth receive a bill of exchange from London of 1500 florins, and is for 284 l ſterling delivered at London, the queſtion is at what price the pound ſterling was delivered.

284 . . 1500 . . 1
30

Facit at 158 $\frac{12}{71}$ gros poliſh.

45000
16628
24
1

First multiply the 1500 by 30 to bring them into groſſe, and then divide them by 284.

(24.) A merchant at Dantzig doth deliver 1000 florins by exchange for London at 158 gros for one pound ſterling, the queſtion is how much he muſt receive at London.

158 . . 1 . . 1000
79 15

Facit l 189 . 17 . 5 $\frac{19}{79}$

150000
71897
7684
2399
53
44

First I take the 1 $\frac{1}{3}$ of my divider 158 facit 79. then I should multiply the third number by 30 to bring it into grosse, but have taken the 1 $\frac{1}{3}$ of 30 which is 15. and then thereby I multiply the 1000. and divide the product by 79 as in example.

(25.) If the exchange from London to Dantzig go at 159$\frac{1}{2}$ grosse polish the pound sterling, the question is how much money I must deliver at London to receive at Dantzig 1384 flo. 13 grosse 2 sh 4 d polish.

159$\frac{1}{2}$ . . 1 . . 1384 . 13 . 2 . 4

1281 41533

2871 124601

Facit l 260 . 8 . $\frac{128}{957}$ sterling.

747610
2734532
11084
283

First consider that every grosse is 3 sh. every shilling is 6 d. so that every grosse is 18 d. therefore I multiply 159.1 $\frac{1}{2}$ by 18. setting the product a place nearer the right hand, and multipying onely by 8. saying 8 halfes is 4, &c. facit being added 2871 for divider, then bring the third number into pence, facit 747610 for divident, as in example.

QVESTIONS

Questions of Exchange between London and Franckfort.

(26.) A Merchant at London doth deliver 100 l sterl. by exchange for Franckfort, at 46 d sterling the floren of 65 kreutzers, the question is how many florens at 60 kr. the floren he must receive at Franckfort.

46 . . 65 . . 100
23 120

Facit $565\frac{5}{23}$ florens.

23000
7525
2

First I should multiply 100 by 240 to bring it into pence, but instead thereof I multiply it by the $\frac{1}{2}$ of 240. and do take the $\frac{1}{2}$ of the divider for the other half, then I consider that the middle number is 1. $\frac{1}{23}$ florin, therefore I must multiply 120 by 1. $\frac{1}{23}$ facit 130. this 130 you must suppose to stand where the 120 doth, then say, once 13 is 13 under a double line, and add the 3 cyphers to it, and then divide by 23. as in example.

(27.) A merchant at London doth receive a bill of exchange from Franckford of 300 l sterl. and is for 1565 flor. at 60 kreutzers the florin delivered there, the question is at what price the 65 kreutzers were delivered.

1565 . . 300 65
260

Facit at $49\frac{261}{313}$ d sterling.

78000
25415
13

First consider 65 kar. is 1 $\frac{1}{12}$ florin, this 30 should be multiplied by 240 to bring it into pence, and by 1. $\frac{1}{2}$ the third number first I multiply the 240 by 1. 1 $\frac{1}{12}$ facit 260. by which I do multiply the 300. facit 78000. which I divide by the first number.

(28.) A

(28.) A merchant at Franckfort doth receive a bill of exchange from London of 1000 flor. at 60 kreutzers the flor. for the value delivered at London at 46 d ſterling for 65 kreutzers, the queſtion is how much was delivered at London ſterling.

First I account the 65 to bee 1.1 of a florin reduced make 13. then I ſhould carry 12.10 the middle number which is done by accounting it 46 ſh. and becauſe I will have a pound come firſt into the quotus, therefore I ſhould divide my divident by 20. which is done by dividing the middle number by 2. and the third number by 10 cutting off a cypher.

65 . . 46 . . 1000
13 23

Facit l 176. 18. $5\frac{7}{13}$ ſterl.

23000
10926
142
217
27

(29.) If the exchange from London to Franckfort go at $45\frac{1}{2}$ d ſterl. for 65 kr. how much money muſt I deliver at London to receive at Franckfort 1500 florins, 40 kr. at 60 kr. the florin.

First conſider that 65 kar. is one flor. 1 of a florin being reduced make 13. then the 45.1 ſhould bee multiplied by 12. but inſtead thereof I account 45 ſh 6 d then I conſider 40 kar. is 2 of a florin, then I ſay, if one make 40 ſh. which is 2 pound which is 3001 l 6 ſh 8 d. and then I take the 1 of 1500. 2 for 5 ſh. and for 6 d I take the 1 of the quotus of 5 ſh. as in example.

65 . . $45\frac{1}{2}$ . . 1500 . 40

13 — 3001 . 6 . 8
375 . 3 . 4
Facit l 262 . 12 . 4 ſter. 37 . 10 . 4

3414. — . 4
83802
164
35

Queſtions

Queſtions of Exchange betweene London *and* Noremberge.

(30.) A Merchant at Noremberge doth receive a bill of exchange from London of 2000 florins at 60 kreut. the florin, and is for 353 l ſterling delivered at London, the queſtion is how much was delivered for the flo. of 65 kreutzers.

2000 . . 353 . . 65
12 13

1200 *Facit* 3 ſh 9 $\frac{89}{100}$ d ſterl.

45898
2906
1

Conſider that 65 kar. is 1. $\frac{1}{13}$ florin, being reduced, make 13. then I ſhould multiply the middle number by 20 to bring it into ſhillings, but inſtead thereof I divide 2000 by 20. facit 100. which I multiply by the ſuppoſed denomination of the third number, facit 1200 for divider, and the middle number being multiplied by the reduced third number 13. make the divident.

(31.) A merchant at Noremberge doth deliver 800 flo. at 60 kreutzers the flo. by exchange for London at 46 $\frac{1}{2}$ d ſterl. the 65 kreutzers, the queſtion is how much he muſt receive at London ſterl.

65 . . 46 $\frac{1}{2}$ . . 800

139. 10. —
15. 10. —

155. — . —
11. 18. 5 $\frac{7}{13}$

Facit 143. 1. 6 $\frac{6}{13}$ ſterl.

Firſt conſidering that if one florin make 46. 1 d. 800 florins will make 800 times as much, then conſidering that 720 d is 3 l. therefore 720 of the 800 doth make 3 times 46. 1 l. then there remaines 80 of the 800 which is 1 l. therefore I take the $\frac{1}{5}$ of 46. 1 being added together, do make 155 l. if the firſt number were but one florin, but the florin is but 60 kar and the third number is 65 ſo that it is the $\frac{1}{13}$ part too much, and therefore I take the $\frac{1}{13}$ part away from 155 l. and the remainder is the facit to this queſtion, as in example.

(32.) A

Remember that 60 kreutzers make one florine.

(32.) A merchant at London doth receive a bill of exchange from Noremberge of 200 l sterl. for the value delivered there at 47 d sterl. the 65 kreutzers, the question is how many florins at 60 kreutzers the florin were delivered at Noremberge.

First consider that 65 kar. is one florin, and $\frac{1}{12}$ because that 60 kar. is a florin, and therefore I take the 200 l by 240, and the $\frac{1}{12}$ of 240 which is 28. added together make 260. by which I multiply the 200. and the product thereof I divide by 47 as in example.

47 . . 65 . . 200
260

Facit 1106 flo. $22\frac{46}{47}$ kreutzers.

520000
53286
408
24

First the 145 l 17 sh 9 d must bee brought into d. facit 35013. then I account the middle number to be 1. 1 of a florin, $\frac{1}{12}$ and therefore I doe account the same pence to be so many florins, by multiplying by one the middle number, and for the 1 I take the $\frac{1}{12}$ of the same pence, and add to the other, and their aggregat I do divide by 46. as in example.

(33.) If the exchange from Noremberge to London go at 46 d sterl. the 65 kreut. how much money must I deliver at Noremberge at 60 kreut. the flo. to receive at London 145 l 17 sh 9 d sterl.

46 . . 65 . . 145 . 17 . 9
2917

35013
2917.45

Facit 824 flo. $34\frac{41}{46}$ kreut.

379305
22260 1
222 2
2 4

Questions

Queſtions of Exchange betweene London and Roane and Paris.

(34.) A Merchant at Roane doth receive a bill of Exchange from London of 1000 l tournois, for the value delivered there at 71 d ſter. for 50 ſh tournois, the queſtion is how much was delivered at London ſterl. when 20 ſh is one pound tournois.

$2\frac{1}{2}$ . . 71 . . 1000

11 . 16 . 8400

Facit l 118. 6. 8 ſterl.

First I bring the firſt number into threepences, and therefore I multiply the third number by 80 by the threepences of a pound, the product whereof I divide by 93, as in example.

(35.) A merchant at Paris doth receive a bill of exchange from London of 2100 francks, and is for 250 l ſterling delivered at London, the queſtion is at what price it was delivered for 50 ſh tournois, when 20 ſh tournois is one francke.

2100 . . 250 . . $2\frac{1}{2}$

125

41 . 8

Facit at 5 ſh 1 $1\frac{7}{41}$ d ſterl.

I account the 50 ſh to be 2 l. $\frac{1}{2}$ which reduce makes 5. then I ſhould carry the denominator to the firſt number, but inſtead thereof I divide the middle number, then I ſhould multiply the middle number by 20 to bring it into ſhillings, and by 5 the third number, which two multiplyers make 100 now inſtead of multiplying the middle number I divide the firſt number, which is done by cutting off the two cyphers, then I divide the middle number by 3 and 7. becauſe that 3 times 7 is 21. as in example.

(36.) A

(36.) A merchant at London doth deliver 250 l sterl. by exchange for Roane at 71 d sterl. for 50 sh tournois, the question is how much he must receive at Roane tournois.

Considering 50 sh is 2. 1/2 and that I should mukiply the third number by it, and also the third by 240 then I consider that 2. 1/2 times 240 is 600. so that I multiply the third number by 600. and divide by 71.

71 . . 50 . . 250
600

l 2112 48/71 tournois.

250000
8998
14

(37.) A merchant at London doth receive a bill of exchange from Paris of 2501 sterl. for the value delivered there at 73 d sterling the 50 sh tournois, the question is how much was delivered at Paris tournois.

First I consider that the third number should be brought into pence like the first, and therefore should be multiplyed by 240 and by 2. 1/2 but I consider that 2. 1/2 times 240 is 600, and therefore I multiply 250 by 600. and divide the product by 73.

73 . . 2 1/2 . . 250
600

Facit l 2054 . 15 . 10 10/73 tournois

2500000
43989
2160
43
76
8
5

Queſtions of Exchange betweene London and Lions.

(38.) A Merchant at London doth deliver 250 l ſterl. by exchange for Lions at 64 d. ſterl. for one crowne de marke, the queſtion is how much he muſt receive at Lions.

64 . . 1 . . 250

750

187½

Facit 937½ eſcus de marcq.

Conſider that 64 d is 5 4 ſh d which multiply by 3 facit 16 ſh and having multiplyed the firſt number by 3. I doe the like to the third, then the firſt number ſo multiplied facit 16. ſh wants the 1 part of it ſuf-
4
ficient to make it 1 l and ſo doe the third number wants 1. part of it
4
to make the facit, wherefore I take the 1 of 75. and
4
to it facit as in example.

(39) A merchant at Lion doth deliver 1000 eſcus de marcq by exchange for London at 62 d ſterl. the crown de marcq, the queſtion is how much he muſt receive at London ſterl.

1 . . 62 . . 1000

250 . — . —

8 . 6 . 8

Facit 1 258 . 6 . 8 ſterl.

Conſidering that 62 d is 5 ſh 2 d then conſidering 5 ſh is the 1 l.
4
therefore of 1000 which is 250. & for 2 d take the 1
12
part of 1000 facit 8 l 6 ſh 8 d which adde to the former.

Queſtions of Exchange betweene London and Rome.

(40) A Merchant at London doth deliver 100 l ſterl. for one duckat de camera, the queſtion is how

how much he must receive at Rome.

72 . . 1 . . 100
2000

Facit 333⅓ duckats.

Considering 72 d is 6 sh. or 3/10 of 2

If you account 3/10 l. you must carrie your denominator to the last number, and so multiply it by 10. and divide it by the numerator 3. but Masterson accounteth the 72 to be 6 sh. and doth multiply 100 the third number by 20 to bring it into shillings, and divide the product by 6. as in example.

(41.) A merchant at Rome doth deliver 1000 duckats by exchange for London at 71 d sterl. the duckat, the question is how much he must receive at London sterling.

1 . . 71 . . 1000

284 . — . —
11 . 16 . 8

Facit l 295 . 16 . 8

Consider that 4 times 240 is 960. if the third number had been 240. the 71 d had been 71 l. but because it is 4 times 240. and more, therefore it is 4 times 71 l and more, but first multiply 71 by 4 because 1000 doth containe 240 4 times, and 40 more, then for 40 which is 1/6 l. take the 1/6 of 71, facit 11 l 16 sh 8 d. added to the former, facit 295 l 16 sh 8 d.

(42.) A merchant at Rome doth receive a bill of exchange from London of 900 duckats for the value delivered there at 71¼ d sterl. for one duckat, the question is how much was delivered at London sterling.

1 . . 71¼ . . 900

215 . 5 . —
53 . 16 . 3

Facit l 269 . 1 . 3 sterl.

Consider that 3 times 240 is 720. so that 720 of the 900 doth cost 3 times 71. 3/4 l. then there remaines 180 multiplied of the 900. this 180 is the 3/4 of a pound, so that I am to take the 3/4 of a pound, or 1/4 of 3 pound, so I take the 1/4 of 3 pound, by the last worke in this question, as in example.

(43.) A

(43.) A merchant at London doth receive a bill of exchange from Rome of 200 l sterling, and is for 676 duckats delivered there, the question is at what price the duckat was delivered.

Multiply the midle number by 24. and divide by the first number.

676 . . 200 . . 1
240

Facit at $71\frac{1}{169}$ d sterling.

48000
684

(44.) A merchant at Rome doth receive a bill of exchange from London of 1233 duckats, and is for 370 l sterl. delivered there, the question is at what price it was delivered for the duckat.

Consider that the middle number 370 must be multiplyed by 240 to bring it into pence, but in steed thereof I multiply it by 80 the $\frac{1}{3}$ of 240. because I take the $\frac{1}{3}$ of 1233 for divider.

1233 . . 370 . . 1
411 80

Facit at $72\frac{8}{411}$ d sterl.

29600
838

(45.) If the exchange from London to Rome go at $71\frac{1}{8}$ d sterl. for one duckat de camera, how much must I deliver at London, to receive at Rome 876 duckats de camera.

First for 60 d which is the $\frac{1}{4}$ of 1 take the $\frac{1}{20}$ of the first number and for 8 d take the $\frac{1}{10}$ of the first number, & for 3 d the $\frac{1}{20}$ of the first number, then for 3 take $\frac{1}{8}$ of the last quotus, being the quotus of 3 d for the $\frac{1}{8}$ and the 1 of 3 d is all one, and so of the like.

1 . . $71\frac{1}{8}$ . . 876

219 . — . —
29 . 4 . —
10 . 19 . —
1 . 7 . $4\frac{1}{2}$

Facit 260 . 10 . $4\frac{1}{2}$ sterl.

(46.) A merchant at London doth receive a bill of exchange from Rome of 175 l sterling for the value delivered there at $72\frac{1}{2}$ d sterling the duckat, the question is how much was delivered at Rome.

First I bring the $72\frac{1}{2}$ into the fraction, facit 145. then I take the $\frac{1}{5}$ for divider, facit 29. then I should multiply the last number by 240 and by 2. which (being done in minde) make 480. and because, I take the $\frac{1}{5}$ part of my divider, therefore I must take the $\frac{1}{5}$ of 480. facit 96. and then I multiply 175 l & the product thereof I divide by 145. as in example.

$72\frac{1}{2}$ . . 1 . . 175

145 — 96

29 — *Facit* $579\frac{9}{29}$ duckats.

16800
2379
2

(47.) If the exchange from Rome to London go at $70\frac{5}{8}$ d sterling the duckat, how much money must I deliver at Rome to receive at London l 237 15 . $8\frac{1}{2}$ sterling.

First I bring those $70\frac{5}{8}$ d into a fraction, facit 565 then bring the third number into pence, facit 5760. then bring the denominator 4 to it, and say, 4. 1 is &c. and divide the product by 565. as in example.

$70\frac{5}{8}$ . . 1 . . 237 . 15 . $8\frac{1}{2}$

565 — 4755
57068

Facit duckats 808 sh. —. d $11\frac{101}{113}$

4565480
46265
252
77
80
5

Questions

Queſtions of Exchange betweene London *and* Venice.

(48.) A Merchant at Venice doth deliver 800 duckats by exchange for London at 64½ d ſterl. the duckat, the queſtion is how much he muſt receive at London ſterl.

1 . . 64½ . . 800

193 . 10
21 . 10

Facit l 215 . — . — ſter.

Conſider that 3 times 240 which is the pence in a pound, is 720. and therefore 720 of the 800 makes 3 times 64. 1 then their remaines 80. wch is 1 1 therefore take 1 of 64 1 facit 21 1 10 ſh added to the former, facit, as in the example.

(49) A merchant at London doth deliver 500 l ſterl. by exchange for Venice at 65 d ſterling for one duckat currenti, the queſtion is how much he muſt receive at Venice.

65 . . 1 . . 500
13 48

Facit 1846 2/13 duckats.

First I ſhould multiply 500 by 240 to bring it into pence, but inſteed thereof I multiply it by 48 the 1 of 240. the product I divide by the 1/5 of 65 which is 13. as in example.

(50.) A merchant at Venice doth receive a bill of exchange from London of 950 duckats, and is for 257 l ſterling delivered at London, the queſtion is how much was delivered for the duckat.

I ſhould multiply the middle number by 240 but I leaue out the Cyphers, and multiply the 24. becauſe for it I purpoſe to leaue out the Cyphers of my diuider 950. as in example.

950 . . 257 . . 1
24

Facit $64\frac{88}{95}$ d ſterling.

6168
48

Firſt I conſider 60 d is the $\frac{1}{1}$ of a pound, and 5 d the 1 of 60. and $\frac{1}{12}$ 2 d the 1 part of $\frac{1}{10}$ of 5 d and ſo I worke it.

(51.) A merchant at Venice doth receiue a bill of exchange from London of 1873 duckats 18 ſh 4 d for the value deliuered there at $65\frac{1}{2}$ d ſterling for one duckat, the queſtion is how much was deliuered at London ſterling, when 20 ſh is one duckat and 12 d one ſhilling Venetian.

1 . . $65\frac{1}{2}$ . . 1873 . 18 . 4

468 . 9 . 7
39 . — . $9\frac{7}{12}$
3 . 18 . $\frac{23}{24}$

Facit 1511 . 8 . $5\frac{15}{24}$

Firſt multiply 250 by 240 to bring it into pence, and diuide by 937. if 60. ſter. be 405 marrauidis, what is 375 l ſter. facit $399\frac{11}{37}$ duckats.

(52.) A merchant at London doth receiue a bill of exchange from Venice of 250 l ſterl. and is for 937 duckats delyuered there, the queſtion is at what price the duckat was delyuered.

937 . . 250 . . 1
240

Facit at $64\frac{32}{937}$ d ſterl.

60000
3782
3

(53.) If

(53.) If the exchange from London to Venice go at 65½ d ſterl. for one duckat currenti, how much money muſt I deliver at London to receive at Venice l 123. 7. 4 de groſſi, when 10 duckats is one l. and 20 ſh one pound, and 12 pence one ſh de groſſi.

Orthus.

1 . . 65½ . . 123 . 7 . 4

30 . 16 . 10
2 . 11 . 4⅚
— . 5 . 1⁴²⁄₆₀
33 . 13 . 4¹¹⁄₆₀
Facit l 336 . 13 . 9⁵⁄₆ ſtz.

(1 . . 65½ . . 123 . 7 . 4

123 . 7 . 4
61 . 13 . 8
20 . 11 . 2⅔
7 . 14 . 2⅔
Facit l 336 . 13 . 9⅚

Firſt conſider that the duckat is 2 ſh that is 1 l then ſay, if 1 make 65. 1 ſter. what will 123 7 ſh 4 d if you carry 10 to the denominator of the firſt number to the middle number, and conſider with your ſelfe, if 60 d be 5 ſh the 10 part being brought to it is 50 ſh which is 2 l then that 10 times 5 d is 4 ſh 2 d and 10 halfe pence is 5 d ſo that in bringing your denominator 10 from the firſt number to the third (vt ſupra) facit 2 l 14 ſh 7 d ſo that the queſtion ſtands thus, if 1 ſh 1 l make 2 l 14 ſh 7 d what will 123 l 7 ſh 4 d it will make twice 123 l 7 ſh 4 d and for 10 ſh the 1 of 123 l 7 ſh 4 d for 3 ſh 4 d the 1 of 10 ſh & for 1 ſh 3 d the 1 of 10 ſh as in the example: or thus, I ſuppoſe the 1 duckats which is 2 ſh to be 1 l which is 10 times as much as it is, & then for 60 d I take the 1 of 123 l 7 ſh 4 d the 1 of that for 1 d the 1 d of that as in example.

(54.) A merchant at London doth receive a bill of exchange from Venice of 500 l ſterling, and is for the value delivered there at 65 d ſterl. the duckat, the queſtion is how much was delivered at Venice.

65 . . 1 . . 500
13 48

Facit l 184 . 12 . 3⁹⁄₁₃ de groſſi.

240008
x26849
26
3

Firſt I take the 1 of the deviſer facit 13. and then I ſhould multiply the third number by 240. but have taken the 1 of my divider, I alſo take the 1 of 240 which is 48. and by that I doe multiply the 500. and the product thereof I divide by 13, as in example.

First bring the fraction of the third number, to the first number and say 4 halfes is 2. facit 258 for divider, then bring the 3 d into pence & into the fraction, facit 227997. for divident.

(55.) If the exchange from Venice to London go at $64\frac{1}{2}$ d sterl. the duckat, how much money must I deliver at Venice to receive at London l 237. 9. $11\frac{1}{4}$ sterl. when 24 d doth make a duckat.

$64\frac{1}{2}$ . . 1 . 237 . 9 . $11\frac{1}{4}$

4749
56999

Facit duckats 883. d $17\frac{1}{43}$

2279972
15536
989
231
48
1

Questions of Exchange betweene London *and* Spaine.

Consider that 60 is 1 of a pound, & therefore 1 take the 1 of 500. and for 6d which is the $\frac{1}{10}$ of 5 sh I take the 1 the quotus of 5 sh as in example, facit 137 l 10 sh sterl.

(56.) A Merchant in Spaine doth receive a bill of exchange from London of 500 duckats, for the value delivered there at 66 d sterling for one duckat, the question is how much money was delivered at London sterl.

1 . . 66 . . 500

125 . — . —
12 . 10 . —

Facit l 137 . 10 . — sterl.

(57.) A

(57.) A merchant in Spaine doth receive a bill of exchange from London of 500 duckats, and is for 137 l 10 ſh ſterl. delivered at London, the queſtion is at what price it was delivered for one duckat.

500 . . 137 . 10 . . 1
4

Facit at { ſh 5 | 50
d 6 |

I ſhould multiply the 137 10 ſh by 20 to bring it into ſhillings, but I rather multiply by the 1 of 20 becauſe I would divide by 1 of 500, ſo that every pound makes 4 ſh. 10 ſh makes 2 ſh whichhauing multiplyed I divide the product by 100 as in example.

(58.) A merchant at London doth receive a bill of exchange from Spaine of 275 l ſterl. and is for 900 duckats delivered there, the queſtion is at what price the duckat was delivered there.

900 . . 275 . . 1
45 55
9

Facit at 6 ſh 1 $\frac{1}{5}$ d. ſterl.

I ſhould divide 275 by 900 which I cannot doe, becauſe it is a leſſe number then the divider, and therefore I ſhould multiply it by 20 to bring it into ſhillings but inſteed thereof I doe divide 900 by 20 facit 45 then I take 1 of 45 for diviſor, and 1 of 275 for divident.

(59.) A merchant at London doth deliver 100 l ſterl. by exchange for Spaine, at 69 d ſterl. for one duckat, the queſtion is how much he muſt receive in Spaine.

69 . . 1 . . 100
23 80

Facit 347 $\frac{10}{23}$ duckats.

I ſhould multiply 100 by 1240 to bring it into pence, but inſteed thereof I multiply by 80 the 1 of 240, and ſo divide the product by the 1 of the firſt number.

8000
x189
1

(60.) A merchant at London doth receive a bill of exchange from Spaine of 275 l ſterl. for the value delivered there at 405 Marravidis for one crowne of 6 ſh ſterl. the queſtion is how much was delivered in Spaine.

First if 6 ſh make 405 marravidis, what will 20 firſt divide 405 by the 1 1/2 of 6. & the quotus multiply by the 1 1/2 201 by placing a Cypher, then I Conſider that if I make 1350 marravidis, 275 l will make 275 times as much, then I take the 11 part of 275 for multiplyer, which is 25. and 11 part of 370, for diuider to bring it into marks, becauſe 374 marravidis make a marke.

6 . . 405 . . 275
34 1350 25

Facit 992 11/17 duckats.

33750
x92
2

(61.) A merchant in Caſtile doth deliver 1000 duckats by exchange for London at 410 Marravidis for a crowne of 6 ſh ſterl. the queſtion is how much he muſt receive at London ſterl.

First I conſider that 374 marravidis make 1 duckat, and therefore I multiply the 1000 duckats by 374. facit 374000. then this ſhould be multiplyed by 6 ſh. but becauſe I would haue a pound to come out firſt, the quotus, therefore I account the 6 ſh to be 1/3 of a pound, and therefore I multiply 374000 by 3. and divide it by 10. which is done by cutting of the Cypher.

410 . . 6 .. 1000
374

Facit l 273 . 13 . 2 2/17 ſterl.

1122000
30577
x244
5332
x8

QVESTIONS

QVESTIONS TO know at what rate we make the Exchange, tranſporting money or wares from one Countrey into another.

(1.)

IF a French crowne be worth 7 ſh ſtz. at Antwerpe, and 6 ſh ſterl. at London, at what price do I make the exchange in bringing French crownes from Antwerpe to London.

6 . . 7 . . 20

3.4

Facit at 23 ſh 4 d ſtz.

Conſider that 6 ſh wants 1 of it ſelfe to make in reaſon of equallitie which the middle number, and therefore the third number muſt haue the 1 of it ſelfe to make the facit, 2. in example.

(2.) If a marke ſtuck at Hambourgh be worth 21 ſh Lubiſh, and at London 3 ſh ſterling, at what price doe I make the exchange in bringing marke ſtucks from Hambourgh to London.

3 . . 21 . . 20

7 . —

1 . 12

Facit at markes 8 ſh 12 Lubiſh.

First divide 21 by 2 facit 7. this 7 ſhould be multiplyed by 20. but then the product will come forth ſhillings, but it ſhould come forth markes, therefore I divide the multiplyer 20 by 16 facit 1. 1/4 now I multiply the 7 by 1 3/4 added to the former, facit 8. 3/4 markes, that is, 8 markes 12 ſh Lubiſh.

1. 1/4 firſt by 1. ſaying once 7 is 7. and then by 1 and 2/4 ſaying, 4 in 7

(3.) If

Mulkiply 65 by 4 facit 260 this divided by 70 Cutting of the Cypher both of the divider, & the divident 26 by 7. facit 3 kreut 5 multiplying by 12 facit 60 this sixtie in your mind divided it by 7 facit 8 4/7 so that the whole facit is 3 sh 8 d 4/7 as in example.

(3.) If a daller at Noremberge be worth 70 kreutzers, and at London 4 sh ster. at what price do I make the exchange for 65 kreutzers in bringing dallers from Noremberge to London.

70 . . 4 . . 65
260

Facit at 3 sh 8 4/7 ster. 65 kreut.

If 4 sh ster 1 be 33 grosse, what is 20 sh. facit 165 grosse polisih, consider that 4 will multiply both the first number and third, and therefore I multiply the middle number by the 1 of 20. facit as in example.

(4.) If a daller at Dantzig be worth 33 grosse, and at London 4 sh sterl. at what price doe I make the exchange for one pound sterl. in bringing dallers from Dantzig to London.

4 . . 33 . . 20

Facit at 165 grosse polisih.

Take the 1. of 140 and 1/2 of 124 facit 62 which is the facit, because the first & middle number are in equali reason.

(5.) If a duckat at Venice be worth 140 sh. and at London 5 sh 10 d sterl. at what price do I make the exchange for the duckat of 124 sh in bringing duckats from Venice to London.

140 . . 5. 10 . . 124
70 *Facit* at 62 d sterl.

(6.) If an angell at Hambourgh be worth 72 sh Lubish, and a French crowne 42 sh Lubish, and that at London a French crown be worth 6 sh sterling, & an angell be 10 sh sterling whether is it better to bring

bring angels or French crownes From Hambourgh to London.

72 . . 10 . . 42
12 70

Facit 5 sh 10 d.

Facit it is better to bring French crownes.

Take the $\frac{1}{6}$ of 72 and $\frac{1}{6}$ of 42 so your first number is 12 & your third number 7 which multiply by your middle number 10. 10 and divide by your first number 12 facit 5 sh 10 d so that it is better to bring French Crownes then Angels for the Crowne after the rate of the Angels is but 5 sh 10 d and the Angell after the rate of the Crowne is 10 sh $3\frac{3}{7}$ d

(7.) If an old daller be worth at Antwerpe 5 sh 1 d flz. and at London 4 sh 2 d sterl. and a Philippus daller at Antwerpe be worth 5 sh 10 d flz. and at London 4 sh 11 d sterl. whether is it better to bring old dallers from Antwerpe to London, or Philippus dallers.

42 . . 5. 1 . . 4. 11
—. 1 $\frac{9}{10}$

Facit 5 sh 11 $\frac{49}{10}$ d.

Facit it is better to bring Philippus dallers.

Consider that 4 sh 2 d is 50 d and 5 sh 1 d is 61 d so that 4 sh 2 d wants 11 of it selfe to make it in equallitie with middle number, so the third number wants 11 of it selfe to make the facit as in example.

(8.) If a kersey at London be worth 57 sh sterl. and at Francford (all charges deducted) it is worth 16 florins at 60 kreutzers the flo. at what price do I make the exchange for 65 kreutzers, in carrying kerseys from London to Francford.

16 . . 57 . . 66
13

741
$185\frac{1}{4}$

Facit at $46\frac{5}{16}$ d ster.

Consider 65 ker are 1 $\frac{1}{3}$ of a florin first this 1 $\frac{1}{3}$ I reduce and facit 13 by this 13 I doe multiply the middle number facit 741 this number should bee multiplyed by 12 to bring it into pence and should carry the denominator of the third number to the first but I omit both multiplying and doe divide the product of the first multiply cation by 4 and 4 for 1 times 4 is 16.

QVESTIONS

A QVESTION TO know at what rate the Exchange muſt bee reckoned at double Uſans, the Exchange at Uſans and Intereſt *per Cento per Anno* being knowne.

IF the Exchange from London to Antwerpe go at 23 ſh 4 d Flemmiſh at Vſans, which is one moneth, at what price ſhall it got double uſans, which is two moneths, when money is worth 10 per cento per anno, without reckoning intereſt upon intereſt.

First bring the 23 ſh 4 d into pence, facit 280 d then there is 12 & 120 for divider, & 280 & 10 for divident then cut of the 2 cyphers of each, Remaines 28 for divident, & 12 for divider. the quotus is 2 1/3 added to the 23.4 facit 23 6/3 as in example.

12 . . 10 . . 1
100 . . — . . 23 . 4

280
2 1/3

Facit at 23 ſh 6 1/3 d Flemmiſh.

QVESTIONS

QVESTIONS OF Exchange and Rechange from diverſe places unto diverſe places.

(1.)

IF the exchange from London to Antwerpe go at 23 ſh flz. and from Lisbone to London at 65 d ſterling, at what price doth it make the exchange from Lisbone to Antwerpe.

As 20 is to 23 ſo is 65 by the value of a ducket at Lisbone to the facit as in example.

20 . . 23 . . 65

$6\frac{1}{2}$

$3\frac{1}{4}$

Facit at $74\frac{1}{4}$ d flz.

(2.) If the exchange from London to Rome go at 72 d ſter. and from Rome to Lions at 60 duckats the marke of 65 eſcus, at what price doth it make the exchange from London to Lions, for one eſcu.

65 . . 60 . . 72

13 12 $5\frac{7}{13}$

Facit at $66\frac{6}{13}$ d ſterl.

Here I take the $\frac{1}{7}$ of 65 and 60, and then the 9 is, as 13 is to 12 ſo is 72 to the facit take away the $\frac{1}{11}$ part from the firſt and then they are in equallitie & therefore take away the $\frac{1}{11}$ part of 72: and the remainder is the facit.

(3.) A

First consider that 60 must haue the 1 to make it in $\frac{1}{3}$ equalitie & therefore you must the third number the 1 of it. $\frac{1}{3}$

(3.) A merchant at London doth deliver money by exchange for Lions at 64 d sterl. and from thence he doth deliver it for Rome at 60 ducati de camera, the question is at what price he doth make the exchange from London to Rome.

60 . . 65 . . 64

$5\frac{1}{3}$

Facit at $69\frac{1}{3}$ d sterl.

First consider that 69 d doth want 69 of it selfe to bring it into equalitie and therefore you must adde the 269 of the third number to it selfe for the facit.

(4.) A merchant at London doth take up money by exchange for Spaine at 69 d for one duckat in banco, and doth deliver the same money for Rome at 71 d sterl. the question is at how much he doth make the exchange from Spaine to Rome for one duckat de camera.

69 . . 71 . . 375

$5\frac{10}{23}$

$5\frac{10}{23}$

Facit at $385\frac{20}{23}$ maravidis.

Bring the first number intopence facit 290 and the 9 markes 1 sh into shillings facit 145 then the question stands thus if 290 be 145 what is 79 d in this question the antecedent is twise so much as the Consequent and therefore the facit must bee the 1 of the third number. $\frac{1}{2}$

(5.) A merchant at London doth take up money by exchange for Hambourgh at 9 marke 1 sh Lubish, and the same money he doth deliver for Antwerpe at 24 sh 2 d flz. and from Antwerpe he doth deliver the same money for Spaine at 79 d flz. the question is at what price he doth make the exchange from Hambourgh to Spaine.

24. 2 . . 9. 1 . . 79

12 16 $39\frac{1}{2}$

290 145

Facit at 2 marke 7 sh 6 d Lubish.

(6.) A

(6.) A merchant at Hambourgh doth take up money by exchange for London at 8 marke 10 ſh Lubiſh, and the ſame money he doth deliver for Antwerpe at 7 marke 13 ſh Lubiſh for one pound ſtem. and from Antwerpe he doth deliver it for Rome at 83 d ſtz. the queſtion is at what price he doth make the exchange from London to Rome.

Bring the firſt number into ſhillings facit 138 then the middle number into ſhillings facit 125 then conſider that 83 muſt be multiplyedby 125 which is done by multiplying it three times by 5 the firſt time in minde the ſecond time expreſſed & the third is dvident as in example or it may be done by 25 and 5 because that 5 times 25 is 125 to multiply by 25 you may prefixe two Cyphers and then the 1 part of that is the product.

8. 10 . . 7. 13 . . 83

138 125 2075

Facit at $75\frac{25}{138}$ d ſterl.

10375
71
2

(7.) A merchant at London doth take up money by exchange for Antwerpe at 23 ſh. and the ſame money he doth deliver for Venice at 62 d. the queſtion is at how much he doth make the exchange from Antwerpe to Venice.

If 20 be 23 what is 62 facit 62 and for 2 of the 3 you muſt take the 1 of 62 and for the half of that which added together facit 71 3 d.

20 . . 23 . . 62
$6\frac{1}{2}$
$3\frac{1}{10}$

Facit at $71\frac{3}{10}$ d ſtz.

(8.) A merchant at London doth deliver money by exchange for Lions at 65 pence ſterling, at what price muſt the factor returne it by exchange for London to gaine 12 per cento per anno, when he

First consider that the losing foure moneths is nothing els but that hee is 4 moneths gainer of that hee gained, and therefore he saith, if 12 moneths gaine 12, what doth foure moneths then againe, if 100 do gaine that, what doth 65. facit 2 3 added to the 65 facit 67 3 in working the 12 and the 12 do ballance each other, then I multiply 65 by 4 and divide the product by 100.

he doth lose 4 moneths, without reckoning gaine of gaines.

12 . . 12 . . 4
100 . . — . . 65

2|60

Facit at 67½ d sterl.

First consider that two 65 ballance, remaines one for divider. the first for 40 d of the 40. take the $\frac{1}{6}$ of 42. because 40 d is the $\frac{1}{6}$ l. and for 6 take $\frac{1}{6}$ of 42 facit 2. remaines 12 sixpences, which is 6 d.

(9.) If the exchange from London to Francfort be at 46 d sterl. and from Franckfort to Lions at 92 kreutzers for one crowne de marke, the question is at what price it doth make the Exchange from London to Lions for one marke of gold of 65 crownes.

65 . . 46 . . 92
1 . . — . . 65

15 . 6 . 8
2 . 6 . —

Facit at l 17 . 12 . 8 sterl.

(10.) A merchant at London doth take up money by exchange for Hambourgh at 9 marke 1 sh Lubish, and when the day of paiment doth come at Hambourgh, the factor doth take up so much there by exchange for London at 8 marke 12 sh Lubish, the question is how much he doth gaine or lose per cento per anno, when he hath occupied the money 4 moneths, and gained therewith after 18 per cento per anno, without reckoning gaine upon gaine.

9 . 1
8 . 12

8.12 . . —.5 . . 100
4 . . — . . 12

140 150
10 5/7

First take the 1 of 3/4 and of 12. facit 1—3. then multiply the 8 markes by 16 and add in 12. facit 140 for divider, then three times 5 is 15. to multiply this 15 by 100 I ſhould prefixe two cyphers, but for one of them I cut off a cypher from 140. and prefix but one before 15. then I divide 150 by 14 he loſt, facit 10 5/7 this 10 5/7 being ſubſtracted from 58 the gaines that he makes of the money, facit 7 2/7 per cento per anno.

Facit he doth gaine $7\frac{2}{7}$ per cento per anno.

(11.) A merchant at London doth deliver money by exchange for Dantzig at 162 groſſe poliſh, and when the day of paiment doth come at Dantzig, the factor doth deliver it againe by exchange for London at 158 groſſe poliſh, the queſtion is how much he doth win per cento per anno, without reckoning gaine upon gaine, when he doth forbeare his money three moneths.

First the 1 of 1 3/3 and 1 of 12 is 4. then 1/3 of 158 is 79 for divider, and 1 of 4 is 1. remains 3 2 and 4 and 100 to bee multiplied together for divident.

162
158

158 . . 4 . . 100
3 . . —. . 12

79 800

Facit $10\frac{10}{79}$ per cento per anno.

(12.) A merchant at London doth deliver money by exchange for Antwerpe at 24 ſhillings one penny Flemmiſh, and when the day of paiment doth come at Antwerpe, the factor doth deliver

he doth loſe 4 moneths, without reckoning gaine of gaines.

12 . . 12 . . 4
100 . . — . . 65

2'60

Facit at 67½ d ſterl.

Fiſt conſider that the loſing foure moneths is nothing els but that hee is 4 moneths gainer of that hee gained, and therefore he ſaith, if 12 moneths gaine 12. what doth foure moneths then againe, if 100 do gaine that, what doth 65. facit 2 3 added to the 65 facit 67 3 in working the 12 and the 12 do ballance each other, then I multiply 65 by 4 and divide the product by 100.

(9.) If the exchange from London to Francfort be at 46 d ſterl. and from Franckfort to Lions at 92 kreutzers for one crowne de marke, the queſtion is at what price it doth make the Exchange from London to Lions for one marke of gold of 65 crownes.

65 . . 46 . . 92
1 . . — . . 65

15 . 6 . 8
2 . 6 . —

Facit at 1 17 . 12 . 8 ſterl.

Firſt conſider that two 65 ballance, remaines one for divider. the firſt for 40 d of the 40. take the 1/6 of 42. becauſe 40 d is the 2 l. and for 6 take 1/6 of 42 facit 2. remaines 12 ſixpences, which is 6 d.

(10.) A merchant at London doth take up money by exchange for Hambourgh at 9 marke 1 ſh Lubiſh, and when the day of paiment doth come at Hambourgh, the factor doth take up ſo much there by exchange for London at 8 marke 12 ſh Lubiſh, the queſtion is how much he doth gaine or loſe per cento per anno, when he hath occupied the money 4 moneths, and gained therewith after 18 per cento per anno, without reckoning gaine upon gaine.

9 . 1
8 . 12

8.12 . . —.5 . . 100
4 . . —— . . 12

140 150
10 5/7

First take the 1 of 1/3 4 and of 12. facit 1—3. then multiply the 8 markes by 16 and add in 12. facit 140 for divider, then three times 5 is 15. to multiply this 15 by 100 I ſhould prefixe two cyphers,

Facit he doth gaine $7\frac{2}{7}$ per cento per anno.

but for one of them I cut off a cypher from 140. and prefix but one before 15. then I divide 150 by 14 he loſt, facit $10.\frac{5}{7}$ this $10.\frac{5}{7}$ being ſubſtracted from 58 the gaines that he makes of the money, facit $7\frac{2}{7}$ per cento per anno.

(11.) A merchant at London doth deliver money by exchange for Dantzig at 162 groſſe poliſh, and when the day of paiment doth come at Dantzig, the factor doth deliver it againe by exchange for London at 158 groſſe poliſh, the queſtion is how much he doth win per cento per anno, without reckoning gaine upon gaine, when he doth forbeare his money three moneths.

First the 1 of 1/3 is 1/3 and 1 of 12 is 4. then 1/3 of 158 is 79 for divider, and 1 of 4 is 1. remains 3 2 and 4 and 100 to bee multiplied together for dividend.

162
158

158 . . 4 . . 100
3 . . —— . . 12

79 800

Facit $10\frac{10}{79}$ per cento per anno.

(12.) A merchant at London doth deliver money by exchange for Antwerpe at 24 ſhillings one penny Flemmiſh, and when the day of paiment doth come at Antwerpe, the factor doth deliver

First consider that the losing foure moneths is nothing els but that hee is 4 moneths gainer of that hee gained, and therefore he saith, if 12 moneths gaine 12. what doth foure moneths then againe, if 100 do gaine that, what doth 65. facit 65 added to the 65 facit 67 3 in working de

he doth lose 4 moneths, without reckoning gaine of gaines.

12 . . 12 . . 4
100 . . — . . 65

260

Facit at 67⅓d sterl.

12 and the 12 do bal

First consider that two 65 ballance, remaines one for divider. the first for 40 d of the 40. take the $\frac{1}{6}$ of 42. because 40 d is the $\frac{1}{6}$ l. and for 6 take $\frac{1}{6}$ of 42 facit 2. remaines 32 fixpences, which is 6 d.

IRREGULA

PAGINATI

(10.) A merchant at London doth take up money by exchange for Hambourgh at 9 marke 1 sh Lubish, and when the day of paiment doth come at Hambourgh, the factor doth take up so much there by exchange for London at 8 marke 12 sh Lubish, the question is how much he doth gaine or lose per cento per anno, when he hath occupied the money 4 moneths, and gained therewith after 18 per cento per anno, without reckoning gaine upon gaine.

9

9 . 1
8 . 12

8.12 . . —.5 . . 100
4 . . —— . . 12

140 150

$10\frac{5}{7}$

First take the $\frac{1}{3}$ of 4 and of 12. facit 1—3. then multiply the 48 markes by 16 and add in 12. facit 140 for divider, then three times 5 is 15. to multiply this 15 by 100 I ſhould prefixe two cyphers, ther from 140. and prefix but one before 15. then I divide being ſubſtracted from 58 the gaines that he makes of the

Facit he doth gaine $7\frac{2}{7}$ per cento per anno.

t London doth deliver mo-
ntzig at 162 groſſe poliſh,
iment doth come at Dant-
iver it againe by exchange
ſſe poliſh, the queſtion is
per cento per anno, with-
n gaine, when he doth for-
ioneths.

First the $\frac{1}{3}$ of is 1. and 1 of 12 is 4. then $\frac{1}{3}$ of 158 is 79 for divider, and $\frac{1}{3}$ of 4 is 2. remains 2 and 4 and 100 to bee multiplied together for dividend.

158 . . 4 . . 100
3 . . —. . 12

79 800

Facit $10\frac{10}{79}$ per cento per anno.

(12.) A merchant at London doth deliver money by exchange for Antwerpe at 24 ſhillings one penny Flemmiſh, and when the day of paiment doth come at Antwerpe, the factor doth deliver

First bring the 23 shillings 6 d into sixepences facit 47 for divider then this should be multiplyed by 2 monethes but insteed thereof I divide 12 by 2 facit 6 then I account the 7 to be 1 1/3 this 6 should be carried to the divider but insteed thereof I divide 6 by it then the 1 1/3 being brought into the fraction facit 7 multiply by 100 facit 700 for divident.

it againe for London at 23 sh 6 d Flemmish, the question is how much he doth gaine per cento per anno, when he doth lose two moneths, without reckoning gaine upon gaine.

24 . 1
23 . 6

23 . 6 . . — . 7 . . 100
2 . . ——— . . 12

47 *Facit* $14\frac{42}{47}$ per cento per anno.

700
232
4

First bring the 8 markes 10 sh into 2 sh peeces which is done by multiplying it by the 1 of 16 saying 8 times 8 is 64 and the 10 sh I account for 5 sh facit 69 for divider then it should be multiplyed 4 monethes but insteed thereof I divide the middle number 4 by the 1 of 8 sh being 4 then I multiply the 12 by 100 facit 1200 for divident.

(13.) A merchant at London doth deliver money by exchange for Hambourgh at 9 marke 2 sh Lubish, and when the day of paiment at Hambourgh doth come, the factor doth returne it by exchange for London at 8 mark 10 sh Lubish, the question is how much he doth gaine per cento per anno, when he doth lose 4 moneths, without reckoning gaine upon gaine.

9. 2
8. 10

8. 10 . . — . 8 . . 100
4 . . ——— . . 12

69 *Facit* $17\frac{9}{23}$ per cento per anno.

1200
5 X 7
2

(14.) A

(14.) A merchant at Hambourgh doth deliver money by exchange for London at 8 marke 12 ſh Lubiſh, the queſtion is at what price the factor muſt make the returne by exchange, when the day of paiment at London doth come, to gaine 12 per cento per anno, when he doth loſe 4 moneths, without reckoning gaine upon gaine.

This queſtion conſiſteth of one worke for if 12. facit 12. 4 facit 4 therefore I ſay if 100 make 104 what ſhal 8 marks 12 ſh firſt I conſider that 104 is 4 & 100 parts more then 100 which is 1 and therefore $\frac{1}{25}$ I take the 1 of 8 $\frac{1}{25}$ markes 12 ſh and adde to it to divide by 25 I doe it by 5 and 5 becauſe that 5 times 5 is 25 as in example.

12 . . 12 . . 4
100 . . 104 . . 8. 12
1. 12
5. $7\frac{1}{5}$

Facit at 9 marke 1 ſh $7\frac{1}{5}$ pence Lubiſh.

(15.) A merchant at London doth take up money by exchange for Hambourgh at 9 mark 1 ſh Lubiſh, and for the paiment thereof he doth ſend clothes to Hambourgh which coſt 61 ſterling the cloth, and doth ſell them there for 30 dallers the cloth at 31 ſh the daller, the queſtion is whether he doth win or loſe, and how much per cento.

First bring the 9 markes 1 ſh into ſhillings being multipled 16 145 whereof I take the 1 facit 29 for divider then I take 1 of facit 6 which doth ballance the 6 remaines 31 to bee multiplyed by 100 for divident facit 3100 which divide by 29.

9. 1 . . 1 . . 30
16 31
145
6 . . — . . 100
29 106
3100
216

Facit he doth win $6\frac{16}{29}$ per cento.

(16.) A merchant at London doth deliver money by exchange for Antwerpe at 24 shillings 1 d flemmish, the question is at what price the factor must make the return by exchange from Antwerpe to gaine 10 per cento per anno, when he doth lose 4 moneths without reckoning gaine upon gaine.

12 . . 10 : . 4 *Facit* $3\frac{1}{3}$

$103\frac{1}{3}$ . . 100 . . 24. 1

310 93

28901

107

2

Facit at 23 sh $3\frac{21}{31}$ pence flemmish.

First consider the facit of the first worke is $3\frac{1}{3}$ then say, if $103\frac{1}{3}$ come of 100 whereof come 24 sh 1 d to worke it first bring $103\frac{1}{3}$ into threepences facit 310 for divider, then multiply 24 sh 1 d by 12. facit 289. then by 100. which is done by prefixing one cypher, facit 2890 for dividend, & Cutting of the divider for the other cypher of 100. the 2890 being divided by 310 facit 93 d in the quotus, and 7 remaines, which I mukiply by 3 the denominator of the first number, facit 21. then the 95 is 7 sh 9 d multiply by 3 the first denominator facit 23 sh 3 d $\frac{21}{31}$

(17.) A merchant at London doth take up money by exchange for Venice at 62 pence sterling, and for the paiment thereof he doth send kerseys to Venice which cost with all charges 55 shillings ster. the kersey, the question is how much he doth win or lose per cento, when he doth sell the kersey there for $9\frac{1}{2}$ duckats.

1 . . 62 . . $9\frac{1}{2}$

55 . . — . . 100

11 190

62

11780

$981\frac{2}{3}$

$89\frac{8}{33}$

Facit he doth loſe $10\frac{25}{33}$ per cento.

Firſt if one duckat be 62 d what is $9\frac{1}{2}$ then if 55 make the facit of the firſt number what doth the 100 to worke it firſt take the 1 of 55 facit $\frac{1}{7}$ 11 for divider then 1 of 100 facit $20\frac{7}{7}$ then I ſhould carry the denominator to the firſt 110 viz to the divider but inſteed thereof I divide 20 by it facit 10 then I bring the $9\frac{1}{2}$ into a whole number facit 18 then I prefixe a cypher to it for 10 then by 62 facit 11780 then divide it by 12 to bring it into ſhillings and then by the divider facit $86.\frac{8}{33}$ which I ſubſtract from 100 facit he doth loſe $10\frac{25}{33}$

(18.) A merchant at London doth take up money by exchange for Spaine at 70 pence ſterling for 375 maravidis, and the ſame money he doth deliver for Aquila at 67 pence ſterling for one duckat carlini, the queſtion is how much money he muſt take up at London for Spaine, to receive at Aquila 526 duckats two carlini and 3 quadrins, when one duckat is 10 carlini, one carlini 6 celli, and one celli 5 quadrins, and alſo at what price he doth bring the exchange from Spaine to Aquila for one duckat carlini.

Firſt take the 1 of 70 facit 14 and 1 of 375 facit 75 then multiply 75 by 67 facit 5025 then take 1 of 14 facit 7 for divider and take the 1 of 5025 for divident facit 2512 1 divide by 7 facit 358 13 marravidis and at that rate hee brings the exchange from ſpaine to aquall the ſame if one duckat be 67 d what is 526 duckats 2 karlie & 39 quadrines but for the third number I conſider that if one duckat had beene 20 ſh and 526 duckats had beene 526 the 2 karlin is 4 ſh and the 3 quadrines is the 3 of agroatu which is 2 2 d which I ſet downe for the third number then I take for 60 d the 1 of it and for 6 d the 1 of that and for 1 d the 1 of that as in example.

70 . . 375 . . 67
14 75

7 5025
2512 5/7

Facit he doth bring the exchange from Spaine to Aquila at 358 13/14 maravidis.

1 . . 67 . . 526 . 4 . 2 3/5

131 . 11 . 3/5 . . 60
13 . 3 . 1 13/10 . . 26
2 . 3 . 10 21/100

Facit l 146 . 18 7/100 ſter. he muſt take up.

Firſt conſider that the 2 cyphers of the divider to ballance the 2 cyphers of the divident then ſay 1 part of 65 is 5 and 1 part of 13 is 1 d remaines 5 for divider & 46 to be multiplyed by 6 for divident then divider adde 46 to be multiplyed by 6 for divident ſaying 6 times 46 is 276 for divident.

(19.) A merchant at London doth deliver money by exchange for Francfort at 46 d ſterl. for 65 kreutzers, and from thence he doth deliver it for Venice at 130 florins for 100 duckats, the queſtion is at what price he doth make the exchange from London to Venice.

65 . . 46 . . 60
1 . . —— . . 130
100 . . —— . . 1

5 276

Facit at 56 1/5 pence ſterling.

(20.) A

(20.) If the exchange from Venice to London be at 64 d ſterling, and from London to Noremberge at 46 d ſterling, at what price doth it make the exchange from Venice to Noremberge.

First cut of cypher from 100 and other from 60 then multiply 40 by 6 facit 276 then multiply 64 by 65 facit 4160 then prefixe an other cypher for the remainder of 100 facit 41600 for divident.

1 . . 64 . . 100
46 . . 65 . . —.-
60 . . 1 . . —.—

276 *Facit* at 150 $\frac{40}{65}$ florins.

41600
240
2

(21.) A merchant at London doth deliver money by exchange for Spaine at 70 pence ſterling for 37 maravidis, and from Spaine he doth deliver it for Antwerpe at 350 maravidis for 6 ſh Flemmiſh, and from Antwerpe he doth deliver it againe for London at 23 ſhillings 6 d Flemmiſh, and then doth find to gaine 10 per cento per anno, the queſtion is how much time he hath loſt, without reckoning gaine upon gaine.

375 . . 70 . . 350
20 . . 23.6 . . ——
72 . . —— . . 1|00
75

54|00 $164\frac{1}{2}$ 10 . . 12 . . $6\frac{67}{108}$

35 9 715

$5757\frac{1}{2}$ 90
$959\frac{7}{12}$
$105\frac{67}{108}$ *Facit* $7\frac{17}{18}$ moneths.

This queſtion conſiſteth of 3 rules of 3. and is thus wrought, take firſt the $\frac{1}{7}$ of 375. facit 75. then the Cypher of 20 doth ballance the Cypher of the 70. then the $\frac{1}{7}$ of 350 is 70. then I account the 23 ſh 6 d to be 23. $\frac{1}{2}$ then I ſhould carry the denominator to the divider, but inſteed thereof I divide 70 the $\frac{1}{2}$ of 370. facit 35. which I place vider the 164 $\frac{1}{2}$ the product of 23. $\frac{1}{2}$ multiplyed by $\frac{1}{7}$ the $\frac{1}{7}$ of 70. then multiply 164. $\frac{1}{2}$ by 35. facit 575. $\frac{1}{2}$ for divident, which I divide by 6 and 9. becauſe 6 times 9 is 54. and 100 maketh 106. and the 69 ſo the gaine is 6. and 67 then ſay if 100 bring in 12. in how long time 6. and $\frac{67}{108}$ thus wrought, firſt I bring the 6 $\frac{67}{108}$ into the fraction facit 705. then I ſhould carry 108 to the divider, but becauſe that $\frac{108}{108}$ conſiſteth of 9 and 12. I omit multiplying 715 by 12. but doe multiply 10 by the $\frac{1}{12}$ part of 108. which is 9. facit 90 for divider, then multiply and divide facit 7. $\frac{17}{18}$

(21) A merchant at London doth deliver money by exchange for Hambourgh at 9 marke 2 ſh Lubiſh, and from thence he doth deliver it for Antwerpe at 7 mark 13 ſh Lubiſh for one pound flemmiſh, and from Antwerpe he doth deliver it for Venice at 72 d Flemmiſh, and from Venice he doth deliver it for Rome at 91 duckats de camera the 100 duckats currenti, and from Rome he doth deliver it for London at 72 d ſterling, the queſtion is how much he doth win or loſe per cento per anno, without

without reckoning gaine upon gaine when he doth lose 8 moneths.

7 .	13 . .	240 . .	9.2
125			146
72 . .	1 . .		——
100 . .	91 . .		——
1 . .	72 . .		——
240 . .	—— . .		100
8 . .	$206\frac{36}{125}$ . .		12
	13286		
	73		

First bring the first and third number into shillings by multiplying them by 12 facit 25 & 146 then consider that 240 the middle of the first rule doe ballance 240 one of the dividers & a hundred ballance and 72 two ballance remaines 125 for devider & 146 multiplyed by 91 for divident facit 13286 for divident then being multiplyed and divided facit $106\frac{36}{125}$ which

Facit he doth gaine $9\frac{54}{125}$ per cento per anno.

6 and $\frac{36}{125}$ gaines vpon 100 then say if 8 monethes make 100 10. sh $\frac{36}{125}$ what shall 12 moneths consider that 12 moneth is the 1 of 8 more then 8 and therefore the facit must be 1 of $6\frac{36}{125}$ more then $6\frac{36}{125}$ which is $9\frac{54}{125}$ per cento per anno gaineas in example.

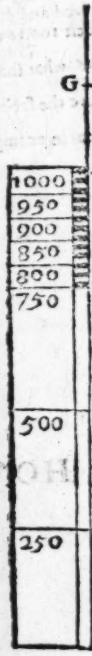
HOW

…greement betweene the measure of London, and the measure of the places following, gathered of those which (I think) have gone nigheſt the truth.

Note that 4 *ells at London is* 5 *yards.* 100 *ells at London is at*

Antwerpe	166⅔	ells	Roane	103	ells
Gant ſhort me:	164	ells	Paris	95	ells
and long me.	154	ells	Lyons	100	ells
Bruges	164	ells	Genua	480⅓	palms
Arras	165	ells	Millan	214	braces
Calice	157	ells	Florence	188	braces
Liſle	166	ells	Venice for ſilk,	196	ells
Maſtricht	173	ells	for linnen, &c.	180	ells
Cullen	208	ells	Rome	56	cana
Francfort	208	ells	Lisbone	100	varras
Noremberge	174	ells	Madera	104	varras
Dantzig	139	ells	Seville	135	varras

For to find the agreement betweene the ells, yards, varras, braces, palmes, &c. of any two Countreyes, Cities, Townes, &c.



LEarne the order or cuſtome of meaſuring of all ſorts of commodities in both places, then prepare a ſmooth ſtraight board, plate or ſuch like: and draw upon the ſame a ſtraight line of the length of the meaſure in one of the places with his allowance of meaſuring, which for example is A B, then divide the line A B into 4 equall parts in the points C. D. E. and divide the quarter A C into 250 equall parts, and number them from 1 to 10 upward, making the point C the 750 part for the number of parts contained in the other quarters. Then marke upon the line A B the length of the meaſure of the other place with his allowance, which is for example from B to F. being juſt in the 900 part. Therefore 900 of the meaſures of the firſt place make juſt 1000 of that meaſure

measures in the other place. But if the measure of the other place be longer than the measure of the first place, as for example that it were from B to G, then take the distance A G with a compasse, and set the one foot in C. and extend the other toward A. which for example doth come to rest in F being 150 parts from C. Therefore 1150 measures of the first place make just 1000 of the other place, &c.

The agreement betweene the weight of London, and the weight of the places following, gathered of those which (I think) have gone nigheſt the truth.

100 L at London is at

Antwerpe	96 L	Noremberge	90 L
Cullen	90 L	Bruges	90 L
Baſle	90 L	Ausbourgh	95 L
Vlme	96 L	Leipzig	99 L
Preſlau	120 L	Lubec	95 L
Dantzig	116 L	Geneve	81 L
Roane	81 L	Marſeilles	112 L
Rochell	112 L	Paris	91 L
Tholouſe	110 L	Genua	141 L
Lyons	105 L	Millan	141 L
Venice ſmall Weight	151 L	Padoua	132 L
		Parma	136 L
Great Weight	95 L	Ancona	130 L
Ferrara	133 L	Roma	127 L
Florence	131 L	Cicilia	148 L
Naples	142 L	Lisbone ſmall Weight	90 L
Laquilla	143 L	Great Weight	83 L
Caſtile	102 L		
Francfort	90 L		

For to make the agreement betweene the pound weight of any two Countryes, Cities, Townes. &c.

PRepare a ballance so exactly made as is possible, that a verie little thing may cause them to incline one way and other way. Likewise prepare of the one place the iust pound, $\frac{1}{2}$ pound, $\frac{1}{4}$ pound, $\frac{1}{8}$ pound, $\frac{1}{16}$ pound, $\frac{1}{32}$ pound, $\frac{1}{64}$ pound, $\frac{1}{128}$ pound, $\frac{1}{256}$ pound, &c. untill you thinke it sufficient. Then take the iust pound weight of the other place & put it in one of the scales of your ballance, and in the other scale put such weightes of the first place that may iustly counterpoise the pound weight of the other place. As for example take that the $\frac{1}{2}$ pound, $\frac{1}{4}$ pound, $\frac{1}{8}$ pound & $\frac{1}{128}$ pound of the first place doth iustly counterpoise the pound weight of the other place, then 128 pound, 64 pound 32 pound and one pound, that is 225 pound of the first place doth iustly weigh 256 L of the other place, But if the pound waight of the first place be lesse then the pound weight of the other place, as for example take that the pound $\frac{1}{2}$ pound, $\frac{1}{256}$ pound and $\frac{1}{512}$ pound of the first place doth iustly counterpoise the pound weight of the other place, then 512 L, 64 L 2 L and one pound that is 579 pound of the first place doth iustly weigh 512 pound of the other place. &c. Thus making an end for this time, I referre that which might be gathered, for the more speedy finding out of the agreement, of measures and weights to the discretion of the ingenious.

BRITISH MUSEUM 14 FEB 87

AN EXPLANATION OF THE FORMER RULES OF FRACTIONS,

that the moſt ignorant with a little paines may underſtand: And this I thought good to add to the firſt Booke, becauſe the reſolution of the former Queſtions conſiſts of them.



LONDON,
Printed by GEORGE MILLER dwelling in the Blacke-Friers. M.DC.XXXIV.

BRITISH MUSEUM

OF FRACTIONS, and their Numeration.

IT is manifeſt and out of controuerſie, that any one thing is not a multitude, or a many of the ſame things: and by the firſt definition of my firſt booke, one is that by which every thing that is, is ſaid one, and by the ſecond definition of my firſt booke. Number is a multitude, or a many of vnits, or oneſe. Then hereby we may conclude, and that truely, that one is not a number, but the originall cauſe of naming and numbring all numbers; meaſuring all numbers, but meaſured of no number, and by the ſecond and third definition of my firſt booke, it may be apparantly gathered, that one is a part of any number. Yet in our workings, by which we attaine unto the quantitie vnknowne deſired, for method and breuitie ſake, ſome time we call & name abuſiuely the vnit number, though in truth we know it to be no number, and that is done, in regard that it is the firſt thing that is named, or conſidered in numbring. By reaſon whereof, the name of the quantity of the thing or things,

for

for breuitie ſake, is abuſiuely turned into the number of the quantitie of the thing or things: and the true meaning of the words and figures is committed vnto the ſpirit to vnderſtand: And this is the rather borne withall and accepted for current, becauſe in our generall precepts of theſe aforeſaid operations, we ſpeake many times of quantities vnknowne, which by chance may be an vnit or a number. The reſt, as in the ſaid 6 inſtruction of my firſt booke.

Example.

$\frac{1}{2}$ d ſignifieth the quantitie of one of thoſe parts that are of one penny, the ſaid penny being parted in two equall parts, and is called one halfe-penny.

$\frac{1}{3}$ l ſignifieth the quantitie of one of thoſe parts of one pound: the ſaid pound being parted in 3 equall parts, and is called one third part pound.

$\frac{3}{4}$ elles ſignifieth the quantitie of 3 of thoſe parts that are of one elle, the ſaid elle being parted in 4 equall parts, and is called three fourth parts elles.

$3\frac{11}{12}$ oz: ſignifieth the quantitie of 3 oz: and the quantitie of 11 of thoſe parts that are of one oz: being parted in 12 equall parts, and is called 3 and eleuen twelue parts oz.

$9\frac{75}{103}$ L ſignifieth 9 L and the quantitie of 75 of thoſe parts that are of one L, the ſaid L being parted into 103 equall parts, and is called 9 and ſeuentie fiue one hundreth and three parts L. and ſo of all other.

Of the abbreviation of Fractions.

Examples.

IF $\frac{16}{48}$ l be given to be abbreviated. Firſt according unto the ſaid 7 inſtruction, divide the denominator 48 by the numerator 16: the quotient is 3, and nothing remaineth. Therefore divide 48 the denominator given, and 16 the numerator given, each apart by 16 the laſt divider, the quotients are 3 and 1 (as here you ſee it done in the example.) Then place 1 the quotient of the numerator above a line, and 3 the quotient of the denominator under the ſame line thus $\frac{1}{3}$, and ſo this ſaid $\frac{1}{3}$ l is equall in value unto $\frac{16}{48}$ l given, and it is written with the leaſt numbers that that value can be written with. If $\frac{24}{108}$ d be given to be abbreviated. Divide the denominator 108 by 24 the numerator, the remainer is 12: then divide 24 the laſt divider by 12 the remainer of the ſame diviſion, and nothing remaineth. Therefore divide 108 the denominator given, and 24 the numerator each apart by 12 the laſt divider: the quotients are 9 and 2 (as here you ſee it in the example) then place the quotient of the numerator above a line, and the quotient of the denominator under

48(3
16

16(1
16

12
108(4 24(2
24 12

1
108(9
12

the ſame line thus, $\frac{2}{3}$ d, which is equall in value vnto $\frac{24}{10788}$ d giuen: and is written with the leaſt numbers that that value can be written with. If $\frac{9784}{10788}$ elles be given to be abbreuiated, diuide 10788 the denominator given, by 9784 the numerator given, & the remainer is 1004. Then diuide 9784 the laſt diuider by 1004 the remainer of the ſame diuiſion the remainer is 748. Then diuide 1004 the laſt diuider, by 748 the remainer of the ſame diuiſion: the remainer is 256. Then diuide 748 the laſt diuider, by 256 the remainer of the ſame diuiſion, the remainer is 236. Then diuide 256 the laſt diuider, by 236 the remainer of the ſame diuiſion, the remainer is 20. Then diuide 236 the laſt diuider by the remainer of the ſame diuiſion the remainer is 16. Then diuide 20 the laſt diuider by 16 the remainer of the ſame diuiſion, the remainer is 4. Then diuide 16 the laſt diuider, by 4 the remainer of the ſame diuiſion, and nothing remaineth. Therefore diuide 10788 the denominator given, and 9784 the numerator given, each a

1004
10788 (1
9784

48
9784 (9
1004

256
1004 (1
748

236
748 (2
256

20
256 (1
236

1
236 (11
220

4
20 (1
16

16 (4
4

212
9784 (2445
4444

partly

partby 4 the laſt divider: the quotients are 2446 and 2697. Then place the quotient of the numerator aboue a line, & the quotient of the denominator vnder the ſame line, thus, $\frac{2446}{2697}$ elles, which is equall in value vnto $\frac{9784}{10788}$ elles given, and is written with the leaſt numbers that that value can be written with. If $\frac{277}{299}$ L be given to be abbreuiated. Divide the denominator 299 by 277 the numerator: remaineth 22. Then divide 277 the laſt divider by the ſaid 22, remaineth 13. Then divide 22 the laſt divider by the ſaid 13, remaineth 9. Then divide 13 the laſt divider by the ſaid 9, remaineth 4. Then divide 9 the laſt divider by the ſaid, 4, remaineth 1. Therefore the value of the fraction given, cannot be written with any leſſe numbers, then with thoſe that it is given, &c. Yet it ſhall not be alwaies convenient, to uſe this aforeſaid way of abbreuiation: but in fractions, difficult & hard to be abbreuiated. For if $\frac{81}{441}$ be given to be abbreuiated: prolong the line drawne betweene the numbers given, making a croſſe line cloſe by them, ſaying, the halfe of 16 is 8, writing that 8

232
10788 (2697
4444

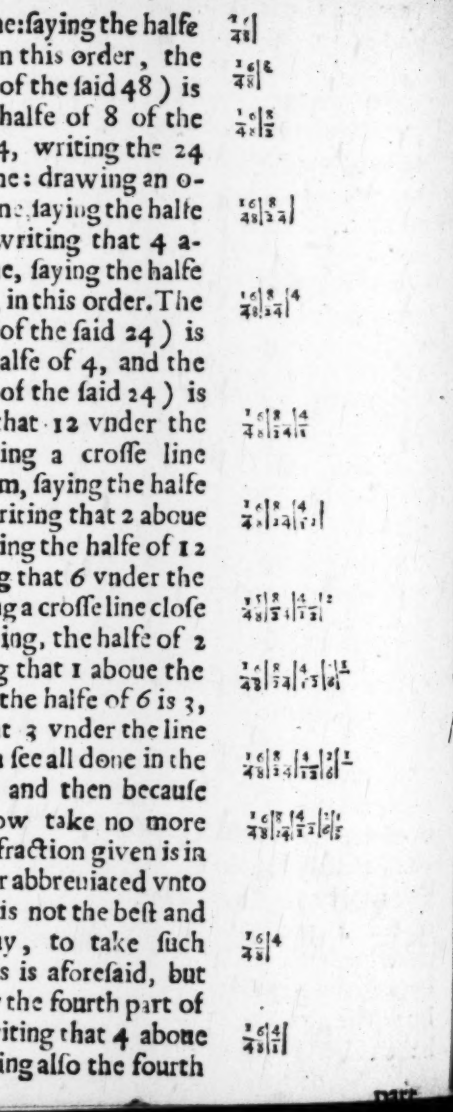
22
299 (1
277

1
53
277 (12
222
2

9
22 (1
13
4

1
9 (2
4
13 (1
9

aboue the line: ſaying the halfe of 48 is 24 in this order, the halfe of 4 (of the ſaid 48) is 2, and the halfe of 8 of the ſaid 48) is 4, writing the 24 vnder the line: drawing an other croſſe line, ſaying the halfe of 8 is 4. writing that 4 aboue the line, ſaying the halfe of 24 is 12, in this order. The halfe of 2 (of the ſaid 24) is 1, and the halfe of 4, and the halfe of 4 (of the ſaid 24) is 2, writing that 12 vnder the line, drawing a croſſe line cloſe by them, ſaying the halfe of 4 is 2, writing that 2 aboue the line, ſaying the halfe of 12 is 6, writing that 6 vnder the line, drawing a croſſe line cloſe by them, ſaying, the halfe of 2 is 1, writing that 1 aboue the line, ſaying the halfe of 6 is 3, writing that 3 vnder the line (as here you ſee all done in the examples) and then becauſe you can now take no more partes, the fraction given is in this manner abbreuiated vnto $\frac{1}{3}$ l, And it is not the beſt and breefeſt way, to take ſuch ſmall parts as is aforeſaid, but rather to ſay the fourth part of 16 is 4, writing that 4 aboue the line, ſaying alſo the fourth



part of 48 is 12: in this order. The fourth part of 4 (of the ſaid 48) is1, and the fourth part of 8 (of the ſaid 48) is 2, writing that 12 vnder the line, ſaying the fourth part of 4 is 1: writing that 1 aboue the line, ſaying, the fourth part of 12 is 3, writing that 3 vnder the line. And ſo the fraction given, is alſo abbreuiated vnto. $\frac{1}{3}$l, as here you ſee it done in the examples. And it is yet a better and breefer way to ſay, the ſixteenth part of 16 is 1, writing that 1 aboue the line, ſaying alſo the ſixteenth part of 48 is 3, writing that 3 vnder the line, as here you ſee it done in the example. If $\frac{24}{108}$ d be giuen to be abbreuiated: ſay the fourth part of 24 is 6, writing that 6 aboue the line. Saying alſo the fourth of 108 is 27, in this order. The fourth part of 10 (of the ſaid 108) is 2, and 2 remaineth, which maketh the 8 (of the ſaid 108) 28, The fourth part of that 28 is 7, writing the ſaid 27 vnder the line, ſaying the third part of 6 is 2, writing that 2 aboue the line, ſaying alſo: the third part of 27 is 9, writing that 9 under the line. And in this maner

$\frac{16}{48}\left|\frac{4}{12}\right.$

$\frac{16}{48}\left|\frac{4}{12}\right|\frac{1}{3}$

$\frac{16}{48}\left|\frac{4}{12}\right|\frac{1}{3}$

$\frac{16}{48}\left|\frac{1}{3}\right.$

$\frac{16}{48}\left|\frac{1}{3}\right.$

$\frac{24}{108}\left|\frac{6}{27}\right.$

$\frac{24}{108}\left|\frac{6}{27}\right|\frac{2}{7}$

$\frac{24}{108}\left|\frac{6}{27}\right|\frac{2}{9}$

$\frac{24}{108}\left|\frac{6}{27}\right|\frac{2}{9}$

the fraction given is abbreviated unto $\frac{2}{9}$ d. But it is yet a better and briefer way to say the twelfe part of 24 is 2, writing that 2 above the line: saying also the twelfe part of 108 is 9, writing that 9 under the line, as here you see all done in the examples. If $\frac{105}{147}$ oz. be given to be abbreviated. First take the third part of both the numbers given, and they are $\frac{35}{49}$. Then take the seventh part of both those numbers, and the fraction is abbreviated unto $\frac{5}{7}$ oz. as here you see it done in the examples,&c.









Of the reducing or bringing of many fractions given under one denomination.

Examples.

IF $\frac{1}{3}$ d and $\frac{1}{4}$ d be given to be brought under one common denomination: multiply (according to the said 8 instruction) 1 the numerator of the first fraction, by 4 the denominator of the other fraction, the product is 4: which 4 is the new found numerator unto the first fraction



ction given. Then multiply 1 the numerator of the other fraction, by 2 the denominator of the firſt fraction, the product is 2: which 2 is the new found numerator unto the other fraction given. Then multiply 2 the denominator of the firſt fraction, by 4 the denominator of the other fraction, the product is 8: which 8 is the common denominator unto both the aforeſaid new found numerators. So that $\frac{2}{8}$ d and $\frac{3}{8}$ d in value is as much as $\frac{1}{2}$ d and $\frac{1}{4}$ d given: and are both reduced under one common denomination 8. If $\frac{5}{6}$ ſh $\frac{7}{8}$ l and $\frac{8}{9}$ ells be given to be reduced under one common denomination, multiply 5 the numerator of the firſt fraction by 8 the denominator of the ſecond fraction, the product is 40. which multiply by 9 the denominator of the third fraction, the product is 360. which 360 is the new found numeration unto the firſt fraction given. Then multiply 7 the numerator of the ſecond fraction, by 6 the denominator of the firſt fraction, the product is 42.

$\frac{1}{2}$ and $\frac{1}{4}$

4 2

$\frac{1}{2}$ and $\frac{1}{4}$

$\frac{4}{8}$ $\frac{2}{8}$

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

40

360

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

40 42

360. 378

which 42 multiply by 9 the denominator of the third fraction, the product is 378. which 378 is the new found numerator unto the second fraction given. Then multiply 8 the numerator of the third fraction, by 8 the denominator of the second fraction, the product is 64, which 64 multiply by 6 the denominator of the first fraction, the product is 384: which 384 is the new found numerator unto the third fraction given. Then multiply 6 the denominator of the first fraction, by 8 the denominator of the second fraction, the product is 48, which 48 multiply by 9 the denominator of the third fraction, the product is 432: which 432 is the common denominator unto all the aforesaid new found numerators. So that $\frac{360}{432}$ sh $\frac{378}{432}$ l. and $\frac{384}{432}$ ells are equall in value to $\frac{5}{6}$ sh $\frac{7}{8}$ l and $\frac{8}{9}$ ells given: and are all reduced under one common denomination 432. Yet it is not the best and briefest way to make so many multiplications as is aforesaid: but rather to consider the denominators of the fractions given, whether any of them be the part of other, or the part of the product of any two of them or more, multiplied together. For by that meanes the operation may be greatly abbreviated in the manner following. If $\frac{1}{2}$ sh and $\frac{1}{3}$ oz, be given to be reduced under one common denomination. Here becauſe 2 the

$\frac{5}{6}$.	$\frac{7}{8}$ and	$\frac{8}{9}$
40	42	64
360.	378.	384

48.	$\frac{5}{6}$.	$\frac{7}{8}$ and	$\frac{8}{9}$
	40	42	64
	$\frac{360}{432}$.	$\frac{378}{432}$ &	$\frac{384}{432}$

the denominator of the first fraction is a part of 4 the denominator of the other fraction, therefore 4 is the common denominator unto both the fractions given. Then say how many times 2 the denominator of the first fraction, in 4 the common denominator found, two times; which two multiply by 1 the numerator of the first fraction, the product is 2. which 2 is the new found numerator unto the first fraction given. Then say how many times 4 the denominator of the other fraction, in 4 the common denominator found, 1 time: which 1 multiply by 1 the numerator of the said fraction, the product is 1. which is the new found numerator of the other fraction given. So that $\frac{1}{2}$ sh and $\frac{1}{4}$ oz. is equall in value to $\frac{2}{4}$ sh. and $\frac{1}{4}$ oz. given, and are both reduced under one common denomination 4. If $\frac{5}{6}$ yards, $\frac{7}{8}$ ells, and $\frac{8}{9}$ L be given to be reduced under one common denomination. Here because 6 the denominator of the first fraction is the part of 72 the product of 8 times 9 the denominators of the other two fractions, therefore 72 is the common denominator found. Then say

$\frac{1}{2}$ and $\frac{1}{4}$

2

$\frac{1}{2}$ and $\frac{1}{4}$

2 1

$\frac{1}{2}$ and $\frac{1}{4}$

$\frac{2}{4}$. $\frac{1}{4}$

how

how many times 6 the denominator of the first fraction in 72 the common denominator found, 12 times; which 12 multiply by 5 the numerator of the first fraction, the product is 60. which 60 is the new found numerator unto the first fraction given. Then say how many times 8 the denominator of the second fraction in 72 the said common denominator, 9 times: which 9 multiply by 7 the numerator of the second fraction, the product is 63. which 63 is the new found numerator of the second fraction given. Then say how many times 9 the denominator of the third fraction in 72 the said common denominator, 8 times: which 8 multiply by 8 the numerator of the third fraction, the product is 64: which 64 is the new found numerator unto the third fraction given. So that $\frac{60}{72}$ yards $\frac{63}{72}$ ells, and $\frac{64}{72}$ L are equal in value to $\frac{5}{6}$ yards, $\frac{7}{8}$ ells, and $\frac{8}{9}$ L. given: and are reduced under one common denomination 72. In like manner you may do all other.

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$.

72
60 12

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$.

72
60.63 12
9

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

72
60.63.64 12
9
8

$\frac{5}{6}$. $\frac{7}{8}$ and $\frac{8}{9}$

72
$\frac{60}{72}$. $\frac{63}{72}$ and $\frac{64}{72}$ 12
9
8

Of

Of Addition in Fractions.

Examples.

IF $\frac{1}{2}$ d and $\frac{1}{3}$ d be given to be added together, reduce them (by the eight inſtruction of my firſt booke) under one common denomination, and they are $\frac{3}{6}$ and $\frac{2}{6}$, then adde 3 the numerator of the firſt fraction, unto 2 the numerator of the other fraction, the aggregat is 5. which 5 divide by 6 the common denominator, the quotient is $\frac{5}{6}$, therefore $\frac{5}{6}$ d is the aggregat of $\frac{1}{2}$ d and $\frac{1}{3}$ d given. If $\frac{1}{7}$ l and $\frac{7}{8}$ l be given to be added together, reduce them as is aforeſaid, under one common denomination, and they are $\frac{40}{48}$ and $\frac{42}{48}$. The aggregat of their numerators is 82: which 82 divide by 48 their common denominator, the quotient is $1\frac{17}{24}$: therefore $1\frac{17}{24}$ l is the aggregat of $\frac{5}{6}$ pound and $\frac{7}{8}$ pound given. If $9\frac{1}{2}$ ſhillings, $8\frac{1}{4}$ ſhillings, $7\frac{1}{8}$ ſhillings, $6\frac{1}{8}$ ſhillings, and $5\frac{1}{3}$ ſhillings be given to be added together, reduce the fractions given under one common denomination,

$\frac{3}{6}$ and $\frac{2}{6}$

3
2

Facit $\frac{5}{6}$ d

$\frac{5}{6}$ and $\frac{7}{8}$

40
42

34
82($1\frac{17}{24}$
48

Facit $1\frac{17}{24}$ l

as is aforesaid: and they are $\frac{16}{24}$ sh $\frac{18}{24}$ sh $\frac{3}{24}$ sh $\frac{20}{24}$ sh and $\frac{8}{24}$ sh: the aggregat of their numerators is 65, which 65 divide by 24 their common denominator, the quotient is $2\frac{17}{24}$ sh, which $2\frac{17}{24}$ sh is the aggregat of all the fractions given, and this aggregat added vnto the whole numbers given, ioyned with the said fractions, the aggregat is $37\frac{17}{24}$ sh: therefore this aggregat is the aggregat of all the whole numbers and fractions given.

$9\frac{2}{3}$. 16 24
$8\frac{3}{4}$. 18 8
$7\frac{1}{8}$. 3 6
$6\frac{5}{6}$. 20 3
$5\frac{1}{3}$. 8 4
17 8
fa: $37\frac{17}{24}$ sh
65 ($2\frac{17}{24}$ sh
24

If $9\frac{2}{5}$ L, $8\frac{4}{9}$ L, $9\frac{2}{3}$ L, $19\frac{3}{5}$ L, and $11\frac{1}{5}$ L, bee given to bee added together, reduce the fractions given vnder one common denomination, and they are $\frac{36}{90}$ L, $\frac{40}{90}$ L, $\frac{60}{90}$ L, $\frac{54}{90}$ L, and $\frac{45}{90}$ L. The aggregat of their numerators is 235, which 235 divide by 90 their common denominator, the quotient is $2\frac{55}{90}$ L, which $2\frac{55}{90}$ L is the aggregat of all the fractions given: and this aggregat added vnto the whole numbers given, ioyned with them, their aggregat is $58\frac{11}{18}$ L. Therefore this aggregat is the aggregat of all the whole numbers and fractions given, and

$9\frac{2}{5}$. 36 45
$8\frac{4}{9}$. 40 90
$9\frac{2}{3}$. 60 18
$19\frac{3}{5}$. 54 10
$11\frac{1}{5}$. 45 30
18
fa: $58\frac{11}{18}$ L 5 45
235 ($2\frac{55}{90}$ L
90

in

in like manner you may adde all other given

Of Subſtraction in fractions.

Examples.

IF $\frac{1}{2}$d be given to be ſubſtracted from $\frac{3}{4}$ d, reduce them by the 8 inſtruction of my firſt book vnder one common denomination & they are $\frac{6}{8}$d and $\frac{4}{8}$ d. Then abate 3 the numerator of the fraction to be abated, from 4 the numerator of the fraction, from which it muſt be abated, the remainer is 1, which 1 is the numerator of the fraction which is the remainer, and 6 their common denominator, is the denominator: therefore $\frac{1}{8}$ d is the remainer, $\frac{1}{8}$ d being abated out of $\frac{3}{4}$ d given. If $2\frac{1}{15}$l be given to be abated out of $7\frac{5}{6}$l, reduce the fractions given vnder one common denomination as is a foreſaid, and they are $\frac{6}{90}$l & $\frac{75}{90}$l. Then abate 6 the numerator of the fraction to be abated, from 6 5 the numerator of the fraction frō which it

$\frac{1}{2}$ from $\frac{3}{4}$

4
3

fac: $\frac{1}{8}$d

muſt

it must be abated, the remainer is 59, which 59 is the numerator of the fraction that is the remainer, and 78 their common denominator, is the denominator. Then abate also 2 l from 7 l, the remainer is 5 l. Therefore $5\frac{59}{78}$ l is the remainer $2\frac{1}{13}$ l being abated from $7\frac{5}{6}$ l given. If $9\frac{1}{2}$ ells be given to be abated from $13\frac{3}{13}$ ells, reduce the fractions given under one common denomination, and they are $\frac{6}{13}$ ells, and $\frac{1}{13}$ ells. Then forasmuch as $\frac{6}{13}$ ells the fraction to be abated is greater then $\frac{1}{13}$ ells the fraction from which it must be abated: borrow one ell of the 13 ells given, and reduce it in a fraction of the same denomination that the fractions given are reduced unto, and it is $\frac{13}{13}$ ells. Then adde this $\frac{13}{13}$ ells vnto $\frac{1}{13}$ ells aforesaid, the aggregat is $\frac{14}{13}$ ells, from which aggregat abate $\frac{6}{13}$ ells aforesaid, remaineth $\frac{7}{13}$ ells. And then 9 ells abated from 12 ells (which was 13 ells given: before you borrowed one ell from it) remaineth 3. Therefore 3 $\frac{7}{13}$ ells is the remainer $9\frac{1}{2}$ ells being abated from thirteene

$2\frac{1}{13}$ from $7\frac{5}{6}$

65
6

Facit $5\frac{59}{78}$ l

$9\frac{1}{2}$ from $13\frac{3}{13}$

1
12

13
6

Facit $3\frac{7}{13}$ ells

$\frac{1}{11}$ ells given. If $3\frac{11}{15}$ L be given to be abated from $4\frac{1}{7}$ l, reduce the fractions given vnder one common denomination, and they are $\frac{11}{60}$ L and $\frac{12}{60}$ L. Then for asmuch as $\frac{11}{60}$ L the fraction to be abated is more then $\frac{12}{60}$ L, the fraction from which it must be abated: borrow 1 L of the 4 L given, reducing it into a fraction of the same denomination that the fractions given are reduced vnto: and it is $\frac{60}{60}$ L. Then adde this $\frac{60}{60}$ L unto $\frac{12}{60}$ L aforesaid, the aggregat is $\frac{72}{60}$ L, from which aggregat abate $\frac{55}{60}$ L aforesaid, remaineth $\frac{17}{60}$ L, and then 3 L abated from 3 L (which was 4 L given: before you borrowed one from it) remaineth nothing. Therefore $\frac{17}{60}$ L is the remainer $3\frac{12}{15}$ L being abated from 4 L given. If $8\frac{1}{11}$ yards bee given to be abated from $13\frac{11}{33}$ yardes, reduce the fractions given under one common denomination: and they are $\frac{33}{33}$ yardes, and $\frac{33}{33}$ yards which fractions being abated the one from the other remaineth nothing. Then 8 yards being abated from 13 yardes given remaineth 5 yardes,

$3\frac{11}{15}$ from $4\frac{1}{7}$

12
60

72
55

Facit $\frac{17}{60}$ L

$8\frac{11}{33}$ from $13\frac{11}{33}$

33
33

facit 5 yardes

There-

Therefore 5 yards is the remainer $8\frac{11}{15}$ yards being abated from $13\frac{33}{35}$ yards given. Yet it is not the beſt and briefeſt way to follow the operations of ſome of the former workes: for if $\frac{7}{9}$ oz. be given to bee abated from $1\frac{1}{3}$ oz. abate $\frac{7}{9}$ oz. from 1 oz. which is $\frac{9}{9}$ oz. remaineth $\frac{2}{9}$ oz. then add that $\frac{1}{3}$ oz. unto $\frac{1}{3}$ oz. the aggregat is $\frac{5}{9}$ oz. therefore that aggregat $\frac{5}{9}$ oz. is the remainer $\frac{7}{9}$ oz. being abated from $1\frac{1}{3}$ oz. given. If $3\frac{11}{12}$ L be given to be abated from $4\frac{1}{3}$ L. abate $3\frac{1}{2}$ L from 4 L. which is $3\frac{12}{12}$ L. remaineth $\frac{1}{12}$ L then add that remainer unto $\frac{1}{3}$ L given, the aggregat is $\frac{17}{60}$. Therefore $\frac{17}{60}$ L is the remainer, $3\frac{1}{2}$ L being abated from $4\frac{1}{3}$ L given. And in the like manner you may do all other ſubſtractions.

$\frac{7}{9}$ from $1\frac{1}{3}$

2

3

F

Of Multiplication in Fractions.

Examples.

IF $\frac{2}{3}$ d be given to be multiplied by $\frac{3}{4}$ L, according to the ſaid 11 inſtruction, multiply the numerators 2 and 3 given together, their product is 6, this 6 is the numerator found to the product: then multiply the denominators 3 and 4 given together, their product is 12. this 12 is the denominator found unto the product. Therefore $\frac{6}{12}$ d or $\frac{6}{12}$ L, which being abbreviated by the 17 inſtruction of my firſt Booke,

$\frac{2}{3}$ by $\frac{3}{4}$

$\frac{6}{12}\left|\frac{1}{2}\right.$

Facit $\frac{1}{2}$ d or $\frac{1}{2}$ l

is

$\frac{5}{8}$d or $\frac{1}{4}$L, as ſhall be thought meeteſt to attaine to the purpoſe pretended, & is the product of $\frac{5}{8}$d, and $\frac{1}{4}$L given multiplied togethet. If $\frac{7}{8}$ſh be given to be multiplied by 9 yardes. Multiply 7 the numerator of the fraction given, by 9 the whole number giuen, the product is 63, then divide this 63 by 8. the denominator of the fraction giuen, the quotient is $7\frac{7}{8}$. Therefore $7\frac{7}{8}$ſh or $7\frac{7}{8}$ yardes (as ſhall bee thought meeteſt to attaine to the purpoſe pretended) is the product of $\frac{7}{8}$ſh and 9 yards given, multiplied togethet.

$\frac{7}{8}$ by 9

63

facit $7\frac{7}{8}$ſh, or $7\frac{7}{8}$ yardes

If $5\frac{11}{13}$ells be given to be multiplied by 5 l. multiply $\frac{11}{13}$ells given by 5 l giuen as is before ſaid, the product is $4\frac{7}{13}$. multiply 3 ells given by 5 l giuen the product is 15, and the aggregat of the two aforeſaid products is $19\frac{7}{13}$: $19\frac{7}{13}$ells or $19\frac{7}{13}$l (as ſhall be thought moſt convenient to attaine vnto the purpoſe pretended) is the product of $3\frac{11}{13}$ells and 5 l multiplied together.

$3\frac{11}{13}$ by 5

55

$4\frac{7}{13}$

15

facit : $19\frac{7}{13}$ells or l

If $4\frac{1}{2}$oz: be given to be multiplied by $3\frac{1}{2}$d, multiply each whole number given particularly by the denominator of his fraction which is given ioyntly with each of them. And to each ſuch product, add particularly the numerator of his aforeſaid ioyned fraction giuen. The ſaid particular aggregats, are 22 and 7, which multiply together, the product is 154. This 154 divide by 10 the product of 5 & 2 the two donominators of the two fractions given, multiplied together. The quotient is $15\frac{4}{10}$: and abbreuiated it is $15\frac{2}{5}$. Therfore 15 $\frac{2}{5}$oz: or 15 $\frac{2}{5}$d (as ſhall be thought moſt conuenient to attaine vnto the purpoſe pretended) is the product of $4\frac{1}{2}$ oz: and $3\frac{1}{2}$ d giuen multiplied together. Yet it is not the beſt & brieſeſt way to follow ſome of the aforeſaid operations: for if $\frac{7}{8}$ſh be given to be multiplied by 9 yards. Conſider that $\frac{7}{8}$ doth want $\frac{1}{8}$ to

$4\frac{1}{2}$ by $3\frac{1}{2}$

22

7

$15\left|\frac{4}{10}\right|\frac{1}{2}$

facit 15 $\frac{2}{5}$oz: or d

Therefore 5 yards is the remainer $8\frac{11}{13}$ yards being abated from $13\frac{11}{13}$ yards given. Yet it is not the beſt and briefeſt way to follow the operations of ſome of the former workes: for if $\frac{7}{9}$ oz be given to bee abated from $1\frac{1}{3}$ oz. abate $\frac{7}{9}$ oz. from 1 oz. which is $\frac{9}{9}$ oz. remaineth $\frac{2}{9}$ oz. then add that $\frac{1}{9}$ oz. unto $\frac{1}{3}$ oz. the aggregat is $\frac{5}{9}$ oz. therefore that aggregat $\frac{5}{9}$ oz. is the remainer $\frac{5}{9}$ oz. being abated from $1\frac{1}{3}$ oz. given. If $3\frac{11}{12}$ L be given to be abated from $4\frac{1}{5}$ L. abate $3\frac{11}{12}$ L from 4 L. which is $3\frac{12}{12}$ L. remaineth $\frac{1}{12}$ L then add that remainer unto $\frac{1}{5}$ L given, the aggregat is $\frac{17}{60}$. Therefore $\frac{17}{60}$ L is the remainer, $3\frac{11}{12}$ L being abated from $4\frac{1}{5}$ L given. And in the like manner you may do all other ſubſtractions.

$\frac{7}{9}$ from $1\frac{2}{9}$

2

3

Facit $\frac{5}{9}$ oz.

$3\frac{11}{12}$ from $4\frac{1}{5}$

5

12

Facit $\frac{17}{60}$

Of Multiplication in Fractions.

Examples.

IF $\frac{2}{3}$ d be given to be multiplied by $\frac{3}{4}$ L, according to the ſaid 11 inſtruction, multiply the numerators 2 and 3 given together, their product is 6, this 6 is the numerator found to the product: then multiply the denominators 3 and 4 given together, their product is 12. this 12 is the denominator found unto the product. Therefore $\frac{6}{12}$ d or $\frac{6}{12}$ L, which being abreviated by the 17 inſtruction of my firſt Booke,

$\frac{2}{3}$ by $\frac{3}{4}$

$\frac{6}{12}\left|\frac{1}{2}\right.$

Facit $\frac{1}{2}$ d or $\frac{1}{2}$ l

is

$\frac{3}{4}$d or $\frac{1}{4}$L, as ſhall be thought meeteſt to attaine to the purpoſe pretended, & is the product of $\frac{3}{4}$d, and $\frac{1}{4}$L given multiplied together. If $\frac{7}{8}$ſh be given to be multiplied by 9 yardes. Multiply 7 the numerator of the fraction given, by 9 the whole number giuen, the product is 63, then divide this 63 by 8. the denominator of the fraction giuen, the quotient is $7\frac{7}{8}$. Therefore $7\frac{7}{8}$ſh or $7\frac{7}{8}$ yardes (as ſhall bee thought meeteſt to attaine to the purpoſe pretended) is the product of $\frac{7}{8}$ſh and 9 yards given, multiplied together. If $3\frac{11}{13}$ells be given to be multiplied by 5 l. multiply $\frac{11}{13}$ells given by 5 l giuen, as is before ſaid, the product is $4\frac{7}{13}$. Then multiply 3 ells given by 5 l giuen, the product is 15, and the aggregat of theſe two aforeſaid products is $19\frac{7}{13}$. Therefore $19\frac{7}{13}$ells or $19\frac{7}{13}$l (as ſhall be thought moſt convenient to attaine vnto the purpoſe pretended) is the product of $3\frac{11}{13}$ells and 5 l multiplied together. If $4\frac{3}{7}$oz: be given to be multiplied by $3\frac{1}{2}$d, multiply each whole number given particularly by the denominator of his fraction which is given ioyntly with each of them. And to each ſuch product, add particularly the numerator of his aforeſaid ioyned fraction giuen. The ſaid particular aggregats, are 22 and 7, which multiply together, the product is 154. This 154 divide by 10 the product of 5 & 2 the two donominators of the two fractions given, multiplied together. The quotient is $15\frac{4}{10}$: and abbreuiated it is $15\frac{2}{5}$. Therfore $15\frac{2}{5}$oz: or $15\frac{2}{5}$d (as ſhall be thought moſt conuenient to attaine vnto the purpoſe pretended) is the product of $4\frac{3}{7}$oz: and $3\frac{1}{2}$d giuen multiplied together. Yet it is not the beſt & briefeſt way to follow ſome of the aforeſaid operations: for if $\frac{7}{8}$ſh be given to be multiplied by 9 yards. Conſider that $\frac{7}{8}$ doth want $\frac{1}{8}$ to

$\frac{7}{8}$ by 9

63

facit $7\frac{7}{8}$ſh, or $7\frac{7}{8}$ yardes

$3\frac{11}{13}$ by 5

55

$4\frac{7}{13}$

15

facit: $19\frac{7}{13}$ ells or l

$4\frac{3}{7}$ by $3\frac{1}{2}$

22

7

$15\left|\frac{4}{10}\right|\frac{1}{7}$

facit $15\frac{2}{5}$oz: or d

make

make 1. Therfore abate alſo the $\frac{1}{8}$ of 9 given, which is $1\frac{1}{8}$ from the ſame 9. The remainer is $7\frac{7}{8}$ and ſo the product is found to be $7\frac{7}{8}$ ſh or $7\frac{7}{8}$ yardes, &c. as is aforeſaid. If $\frac{2}{3}$d be given to be multiplied by $\frac{3}{4}$ L. Conſider that the $\frac{1}{3}$ of $\frac{3}{4}$ is $\frac{3}{12}$, which is $\frac{1}{4}$. Therefore $\frac{1}{4}$d or $\frac{1}{2}$ L, is thus alſo found to be the product of $\frac{2}{3}$d multiplied by $\frac{3}{4}$ L given. If 4 $\frac{2}{7}$ oz: be given to be multiplied by $3\frac{1}{4}$ d, ſay 3 times $4\frac{2}{7}$ is $12\frac{6}{7}$, that is $13\frac{1}{7}$, and the $\frac{1}{4}$ times of $4\frac{2}{7}$ is $2\frac{1}{7}$, which $2\frac{1}{7}$ added vnto $13\frac{1}{7}$ before found, the aggregat is $15\frac{2}{7}$. Therefore $15\frac{2}{7}$ oz: or $15\frac{2}{7}$ d, is thus alſo found to be their product as is aforeſaid, and in like manner you may doe all ſuch other.

$\frac{7}{8}$ by 9

$1\frac{1}{8}$

facit $7\frac{7}{8}$ ſh or yardes,

$\frac{3}{4}$ by $\frac{1}{2}$

$\frac{3}{8}\left|\frac{1}{2}\right.$

facit $\frac{1}{2}$d or L

$4\frac{2}{7}$ by $3\frac{1}{4}$

$13\frac{1}{7}$

$2\frac{1}{7}$

facit $15\frac{2}{7}$ oz: or d.

Of diviſion in fractions.

Examples.

IF $\frac{3}{4}$d be given to be divided by $\frac{1}{3}$d according to the ſaid 12 inſtructiō, bring the fractions given by the 8 inſtruction of my firſt booke under one common denomination, and they are $\frac{9}{12}$ and $\frac{4}{12}$. Then divide 4 the numerator of the dividēt ſo reduced, by 3 the numerator of the diuiderſo reduced. the quotient is $1\frac{1}{3}$. Therefore $\frac{1}{3}$ the divider given, is contained in $\frac{3}{4}$ the dividēt given $1\frac{1}{3}$ times. if $\frac{1}{3}$d be given to be divided by $\frac{1}{4}$d. Bring them under one common denomination, and they are $\frac{4}{12}$ and $\frac{3}{12}$. Then divide 3 the numerator of the dividēt given ſo reduced, by 4 the numerator of the divider given ſo reduced, the quotient is this fraction $\frac{3}{4}$, becauſe the divider is greater

$\frac{3}{4}$ by $\frac{1}{3}$

1

$4\left(1\frac{1}{3}\right.$

4

facit $1\frac{1}{3}$ times

$\frac{1}{3}$ by $\frac{3}{4}$

facit $\frac{1}{4}$ times.

greater then the divident: therefore $\frac{1}{7}$ d the divider given is contained in $\frac{1}{4}$ d the divident given $\frac{3}{4}$ times. If 9 ſh be given to be divided by $\frac{3}{7}$ ſh. For your more perſeuerance, write the 9 given, in forme of a fraction, hauing 1 his denominator, for therby his value is nothing altered, & they are $\frac{9}{1}$ ſh to be divided by $\frac{3}{7}$ ſh. Then reduce thē vnder one common denomination, and they are $\frac{63}{7}$ and $\frac{3}{7}$. Then divide 45 the numerator of the divident given ſo reduced, by 3 the numerator of the divider given ſo reduced, the quotient is 15. Therefore $\frac{3}{7}$ ſh the divider given, is contained in 9 ſh the divident given 15 times. If $\frac{3}{7}$ ſh be given to be divided by 9 ſh, write the 9 ſh given in forme of a fraction as is aforeſaid: and they are $\frac{3}{7}$ and $\frac{9}{1}$. Then reduce them vnder one common denomination, and they are $\frac{3}{7}$ and $\frac{63}{7}$. Then divide 3 the numerator of the divident ſo reduced, by 45 the numerator of the divider given ſo reduced. The quotient for the cauſe aforeſaid is this fraction $\frac{1}{21}$, that is, being abbreuiated $\frac{1}{7}$. Therfore 9 ſh the divider given is contained in $\frac{3}{7}$ ſh, the divident given $\frac{1}{7}$ times. If $1\frac{1}{4}$ l be given to be divided by 7 l, reduce the divider and the divident given, in the forme of two fractions in this manner, multiyly 1 the whole number of the divident given, by 4 the denominator of the fraction ioyned with it, the product is 4, to this 4 adde 3 the numerator of the ſaid fraction, the aggregat is 7, this 7 is numerator, & 4 the denominator of the ſaid fraction, is denominator, ſo that they are $\frac{7}{4}$ & $\frac{7}{1}$. Then reduce them vnder one common denomination, and they are $\frac{7}{4}$ and $\frac{28}{4}$. then divide 7 the numerator of the divident given ſo reduced, by 28 the numerator of the divider ſo reduced, the quotient is $\frac{7}{28}$, that is $\frac{1}{4}$ being abbreuiated. Therfore 7 l the divider given is contained in

$\frac{9}{1}$ by $\frac{3}{7}$

45 (15
3 3

facit 15 times.

$\frac{3}{7}$ by $\frac{9}{1}$

$\frac{3}{21}\left|\frac{1}{7}\right.$

facit $\frac{1}{7}$ times.

$1\frac{1}{4}$ by 7

$\frac{7}{28}\left|\frac{1}{4}\right.$

facit $\frac{1}{4}$ times.

$1\frac{3}{4}$ l the divident given 4 times. If 7 l be given to be divided by $1\frac{1}{4}$ l, reduce the divident & the diuider given in forme of two fractions as is aforesaid, and they are $\frac{7}{1}$ and $\frac{7}{4}$. Then reduce them vnder one common denomination, and they are $\frac{28}{4}$ and $\frac{7}{4}$. Then divide 28 the numerator of the divident so reduced, by 7 the numerator of the divider so reduced, the quotient is 4. Therefore $1\frac{3}{4}$ l the divider given is contained in 7 l the divident given 4 times. If $\frac{3}{3}$ L be given to be divided by $1\frac{1}{3}$ L, reduce them as is aforesaid in forme of fractions, thus $\frac{3}{3}$ and $\frac{4}{3}$. Then reduce them under one common denomination, and they are $\frac{9}{9}$ and $\frac{12}{9}$ then divide 4 the numerator of the divident given so reduced, by 9 the numerator of the divider given so reduced: the quotient is $\frac{4}{9}$. Therefore $1\frac{1}{3}$ L the divider given is contained in $\frac{3}{3}$ L the divident given $\frac{4}{9}$ times. if $1\frac{1}{3}$ L be given to be divided by $\frac{2}{3}$ L, write them as is aforesaid, thus $\frac{4}{3}$ and $\frac{2}{3}$. Then reduce them under one common denomination, and they are $\frac{9}{6}$ and $\frac{4}{6}$. Then divide 9 the numerator of the divident given so reduced, by 4 the numerator of the divider given so reduced. The quotient is $2\frac{1}{4}$: therefore $\frac{2}{3}$ L the divider given is contained in $1\frac{1}{3}$ L the divident given $2\frac{1}{4}$ times. If $2\frac{3}{4}$ ells be given to be divided by $7\frac{3}{7}$ ells, reduce them as is aforesaid in the forme of two fractions, & they are $\frac{11}{4}$ & $\frac{37}{7}$. Then reduce them under one common denomination, & they are $\frac{55}{20}$ and $\frac{148}{20}$, then divide 55 the numerator of the divident given so reduced, by 148 the numerator of the divider given so reduced, the quotient is $\frac{55}{148}$. Therefore $7\frac{3}{7}$ ells the divider given, is contained in $2\frac{3}{4}$ ells the divident given $\frac{55}{148}$ times. If $7\frac{3}{7}$ ells, be given to be di-

7 by $1\frac{1}{4}$

28 (4

7

facit 4 times.

$\frac{3}{3}$ by $1\frac{1}{3}$

3

facit $\frac{4}{9}$ times.

$1\frac{1}{3}$ by $\frac{2}{3}$

3 1

9 ($2\frac{1}{4}$

4

facit $2\frac{1}{4}$ times.

$2\frac{3}{4}$ by $7\frac{3}{7}$

11 37

facit $\frac{55}{148}$ times.

vided

vided by 2 ¼ ells. Reduce them as is aforeſaid in the forme of two fractions, and they are $\frac{17}{7}$ and $\frac{11}{5}$: then reduce them unto one common denomination, and they are $\frac{148}{70}$ and $\frac{154}{70}$. Then divide 148 the numerator of the divident given ſo reduced by 55 the numerator of the divider given ſo reduced, the quotient is 2 $\frac{18}{77}$. therefore 2 ¼ ells the divider given is contained in 7 $\frac{3}{5}$ ells the divident given 2 $\frac{18}{77}$ times. Yet it is not the beſt and the briefeſt way to follow ſome of the aforeſaid operations, for if $\frac{1}{4}$ d be given to be divided by $\frac{1}{7}$ d. Conſider that $\frac{1}{7}$ d the divider given is 2 times contained 1 d, then multiply $\frac{1}{3}$ the divident given, by the aforeſaid 2, the product is 1 $\frac{1}{3}$. Therefore $\frac{1}{3}$ d the divider given is contained in $\frac{2}{3}$ d, the divident given the aforeſaid 1 $\frac{1}{3}$ times. If 9 ſh be given to be divided by $\frac{3}{7}$ ſh. divide 9 the divident given, by 3 the numerator of the divider given, the quotient is 3, and then multiply this 3 by 5 the denominator of the divider given, the product is 15. Therefore $\frac{3}{7}$ ſh is contained in 9 ſh the ſaid 15 times. If $\frac{1}{7}$ ſh be given to be divided by 9 ſh. Divide 3 the numerator of the divident given, by 9 the divider given, the quotient is $\frac{1}{3}$ this $\frac{1}{3}$ divide by 5 the denominator of the divident given, the quotient is $\frac{1}{77}$. Therefore 9 ſh the divider given, is contained in $\frac{3}{7}$ ſh the divident given $\frac{1}{77}$ times, and in like manner you may doe all other.

$7\frac{3}{5}$ by $2\frac{2}{7}$

37 11

3

148(2 $\frac{18}{77}$

55

facit 2 $\frac{18}{77}$ times.

$\frac{2}{3}$ by $\frac{1}{3}$

facit 1 $\frac{1}{3}$ times

9 by $\frac{3}{7}$

3

facit 15 times

$\frac{1}{7}$ by 9

$\frac{1}{7}$

facit $\frac{1}{77}$ times.

This table doth ſhew what theſe parts of 1 ſh are in pence.

d	is the	ſh
1	. .	1/12
1½	. .	1/8
2	. .	1/6
3	. .	1/4
4	. .	1/3
4½	. .	3/8
6	. .	1/2
7½	. .	5/8
8	. .	2/3
9	. .	3/4
10	. .	5/6
10½	. .	7/8

This table doth ſhew what theſe parts of 1 l are in ſhillings.

ſh	is the	l
2	. .	1/10
4	. .	2/10
6	. .	3/10
8	. .	4/10
10	. .	5/10
12	. .	6/10
14	. .	7/10
16	. .	8/10
18	. .	9/10

This Table doth ſhew what theſe parts of 1 L are in ounces.

oz :	is the	L
1	. .	1/16
2	. .	1/8
3	. .	3/16
4	. .	1/4
5	. .	5/16
6	. .	3/8
7	. .	7/16
8	. .	1/2
9	. .	9/16
10	. .	5/8
11	. .	11/16
12	. .	3/4
13	. .	13/16
14	. .	7/8
15	. .	15/16

This table doth ſhew what theſe parts of 1 l are in pence.

d	is the	l
1½	. .	1/80
2	. .	1/60
3	. .	1/40
4	. .	1/30
6	. .	1/20
8	. .	1/15

This table doth ſhew what theſe parts of 1 *l are in* ſh *and* d.

ſh	d	is the	l
1	—	. .	1/20
1	3	. .	1/18
1	4	. .	1/15
1	8	. .	1/12
2	6	. .	1/8
2	8	. .	2/15
3	—	. .	3/20
3	4	. .	1/6
3	9	. .	3/16
4	—	. .	1/5
5	—	. .	1/4
5	4	. .	4/15
6	3	. .	5/18
6	8	. .	1/3
7	—	. .	7/20
7	6	. .	3/8
8	—	. .	2/5
8	4	. .	8/15
8	9	. .	7/16
9	—	. .	9/20
9	4	. .	7/15
10	—	. .	1/2
10	8	. .	11/15
11	—	. .	11/20
11	3	. .	9/16
11	8	. .	7/12
12	—	. .	3/5
12	6	. .	13/20
13	—	. .	13/20
13	4	. .	2/3
13	9	. .	11/16
14	8	. .	11/15
15	—	. .	3/4
16	—	. .	4/5
16	3	. .	17/20
16	8	. .	5/6
17	—	. .	17/20
17	4	. .	11/12
17	6	. .	7/8
18	4	. .	11/12
18	8	. .	14/15
18	9	. .	15/16
19	—	. .	19/20

This table doth ſhew what theſe parts of 1 *C are in pounds.*

L is the C	L is the C
7 . .	1/3	63 . .	9/10
8 . .	1/12	64 . .	4/5
14 . .	1/6	70 . .	5/6
16 . .	1/7	72 . .	9/10
21 . .	5/16	77 . .	11/12
24 . .	3/10	80 . .	5/6
28 . .	1/2	84 . .	5/6
32 . .	2/7	88 . .	11/12
35 . .	5/16	91 . .	11/12
40 . .	5/12	96 . .	6/7
42 . .	5/8	98 . .	7/8
48 . .	3/7	104 . .	13/14
49 . .	7/16	105 . .	1/12
56 . .	1/2		

Errata

Courteous reader I intreat thee to amend theſe faults eſcaped.

The queſtions of loſſe and gaine with time begines at the 21 th queſtion of that rule, and in the queſtions of Mixtions I intreat thee to amend the word delee which ſhould have beene allay.

BRITISH
14 FEB 87
MUSEUM

In this queſtion and the like if your debitor doe agree to pay all the debts due at ſundry times at one paiment, firſt place the debts one under another, and the time when they are due one under another right againſt the debts, and multiply the debts by the time, then add the products together, and divide their aggregat by the aggregat of moneyes added together, and the quotus doth ſhew the time when that is to be paid.

(2.) A merchant hath owing 197 l 17 ſh 11 d. to be paid $\frac{1}{4}$ at five moneths, $\frac{1}{3}$ at 7 moneths, and the reſt at 9 moneths: and his debter doth agree to pay it all at one paiment, without reckoning intereſt upon intereſt, the queſtion is when that paiment muſt be, that neither have advantage of the other.

$\frac{1}{4}$ . . 5 . . $1\frac{1}{4}$
$\frac{1}{3}$ . . 7 . . $2\frac{1}{3}$ *Facit* at $7\frac{1}{3}$ moneths.
$\frac{5}{12}$ . . 9 . . $3\frac{3}{4}$

Do this queſtion in all reſpects like the firſt, your dividend is 236. and your divider 56. which I part into 8 and 7. becauſe that 8 times 7 is 56.

(3.) A merchant hath owing 560 l to be paid 100 l content, 200 l at 4 moneths, and the reſt at 6 moneths, and his debter doth agree to pay him altogether at one paiment, the queſtion is when that paiment muſt be, that neither have advantage of the other, without reckoning intereſt upon intereſt.

100 . . --- . . ----
200 . . 4 . . 80
260 . . 6 . . 156

56 236
$29\frac{1}{2}$
Facit at $4\frac{1}{4}$

(4.) A doth owe unto B 500 l to be paid 200 l at 3 moneths, and the reſt at 6 moneths: and B doth owe unto A 700 l. to be paid at 9 moneths: and they do agree that A ſhall pay all his money content, and B his ſo much the ſooner, the queſtion is when B muſt pay the 700 l that neither have advantage of the other, without reckoning intereſt upon intereſt.

200 . . 3 . . 6
300 . . 6 . . 18 *Facit* at $5\frac{4}{7}$ moneths.

7 24
$3\frac{3}{7}$

In this queſtion firſt I multiply A his money by his time, and the aggregat of the product is 24. and to know how much B muſt pay his money the ſooner to requite A his kindneſſe, which muſt needs be at ſuch a time, the multiplication being multiplied by it, the product is 24 which to know, the way is to divide 24 by 7 the money, the quotus is 3 and $\frac{3}{7}$ then he muſt abate $\frac{3}{7}$ of 9 moneths, and the remainder is the time when he muſt pay the reſt.

(5.) A merchant hath owing a ſumme of money, to be paid $\frac{1}{4}$ content, $\frac{1}{5}$ at 4 moneths, and the reſt at 6 moneths, and his debter doth agree to pay him $\frac{2}{3}$ content, and the reſt altogether at one paiment, the queſtion is when that paiment muſt be, that neither have advantage of the other, without reckoning intereſt upon intereſt.

$\frac{1}{4}$ . . — . . —
$\frac{1}{5}$ . . 4 . . $1\frac{1}{3}$ } *Facit* $3\frac{1}{6}$
$\frac{1}{2}\frac{1}{2}$ . . 6 . . $2\frac{1}{2}$ }

Facit at $11\frac{1}{3}$ moneths.

In this queſtion firſt I conſider when the common time is for the debt to bee paid, and the firſt is at $3\frac{5}{6}$ moneths, then I conſider that if he pay the $\frac{1}{3}$ content, then he is to have the reſt for a double time, that is twice ſo long, if hee pay $\frac{1}{3}$ content, he is to have $\frac{1}{3}$ of the time, ſo long if the $\frac{2}{3}$ of the money contens he is to have the reſt $\frac{2}{3}$ of the time longer.

(6.) A merchant hath owing 463 l 17 ſh 9 d. to be paid at ſeven moneths, and his debter doth agree to pay him $\frac{1}{2}$ content, $\frac{1}{3}$ at 4 moneths, the queſtion is at what time he muſt pay the reſt, that neither have advantage of the other, without reckoning intereſt upon intereſt.

In this question a merchant hath money owing to be paid at 7 moneths, but the debter doth pay the 1 content, and 1 at 4 moneths, being multiplied by his time makes 1.1 but substracted from the product of 7. remaines 5.2 now the time when he should pay the rest, which is the 1 is found out by dividing the remainder of time the 1 5.2 we divide by one, the quotus wilbe —— but by 1 the divider must needs be twice as much, the quotus is 34 moneths, so long time he must have to pay the other 1. as in example.

1	. .	7	. .	7
1/2	. .	—	. .	—
1/3	. .	4	. .	1 1/3
1/6				5 2/3

Facit at 34 moneths.

(7.) A merchant hath owing 400 l to be paid at 7 moneths, and his debter doth agree to pay him 150 l at three moneths, on condition that he shall let him have the rest for so much the longer, the question is when he must pay the rest, that neither have advantage of the other, without reckoning interest upon interest.

First consider that the debter doth pay 150 of his debt 4 moneths sooner than hee should do, & therefore I do account as if I hadlent him 150 l for 4 moneths which time being multiplied by the money make 60. there remaines 250 which should be forborn such time as will recompence the other, and therefore I cut off the cyphers from 150 as I do from 150.

400
150 . . 4 . . 60

25 2 2/7
7

Facit at 9 2/7 moneths.

and then I will divide 60 the product of the first number, the quotus 2.2 moneths, which time 250 l being forborne, do requite 150 l for foure moneths, because their products are equall.

(8.) A merchant hath owing 99 pounds and 11 pence, to be paid 1/3 content, 1/4 at 3 moneths, 1/7 at 5 moneths, and the rest at 7 moneths: and his debter doth agree to pay him all together at one paiment the question is when that paiment must be, that neither

neither have advantage of the other, without reckoning intereſt upon intereſt.

$\frac{1}{3}$ . . — . . —
$\frac{1}{4}$ . . 3 . . $\frac{3}{4}$
$\frac{1}{7}$ . . 5 . . 1
$\frac{1}{60}$ . . 7 . . $1\frac{31}{60}$

Facit at $3\frac{4}{17}$ moneths.

This queſtion and ſuch like are done by multiplying the money by the time, then add the money together, and the product of the multiplication together, then divide the product of the multiplication by the product of the money.

(9.) A merchant hath owing 173 l 17 ſh 11 d to be paid $\frac{1}{7}$ at two moneths, $\frac{1}{4}$ at three moneths, $\frac{1}{3}$ at foure moneths, and the reſt at 5 moneths: and his debter doth agree to pay him $\frac{1}{2}$ content, and the reſt all at one paiment, the queſtion is when that paiment muſt be, that neither ſurmount the other, without reckoning intereſt upon intereſt.

$\frac{1}{7}$ . . 2 . . $\frac{2}{7}$
$\frac{1}{4}$ . . 3 . . $\frac{3}{4}$
$\frac{1}{3}$ . . 4 . . $1\frac{1}{3}$
$\frac{13}{60}$ . . 5 . . $1\frac{13}{15}$

Facit $3\frac{17}{30}$

Facit at $7\frac{2}{17}$ moneths.

This queſtion is like the former of this kind, and by diverſe ſummes due at ſeverall times, for then all is at $3.\frac{7}{20}$ moneths, but the debter would pay $\frac{1}{3}$ content, and would have the like kindneſſe in forbearing the reſt and paying $\frac{1}{2}$ the money, $3.\frac{17}{30}$ ſooner than it was due, it is reaſon that he ſhould pay the other $3.\frac{17}{30}$ after that is due, which added together facit $7.\frac{2}{17}$ moneths.

(10.) A

First set downe the debt and time and multiply the one by the other, facit 3600. then set downe the money that is and shalbe paid, and the time with it, multiply the time, facit 300. this product substract from 3600 remaines 3300. then substract your 250 from 400 remaines 150. this 150 should be paid at such a time as being multiplied by it, the product should be 3300 which to do, I divide 3300 by 150, cutting off cyphers from 150. and from 3300. and then divide 330 by 15.

400	. .	9	. .	3600
100	. .	---	. .	----
150	. .	2	. .	300
150				3300

Facit at 22 moneths.

(11.) A doth owe unto B 200 pound, to be paid 40 pound content, 50 pound at 2 moneths, 60 pound at 3 moneths, and the rest at 4 moneths: and B doth owe unto A 500 pound, to be paid 50 l content, 100 pound at 4 moneths, 200 pound at 6 moneths, and the rest at 8 moneths: and they do agree that A shall pay 90 l content, and the rest at one moneth, on condition that B shall pay the 500 pound at one paiment for so much the sooner, the question is when that paiment must be, that neither have advantage of the other, without reckoning interest upon interest.

40

40	--	--	----	50	--	--	----
50	2	100		100	4	400	
60	3	180		200	6	1200	
50	4	200		150	8	1200	
		480		50		280	
						37	
						243	
90	--	--	----				
110	1	110					

Facit at $4\frac{43}{70}$ moneths.

Firſt ſet down A his debts and the time when they ſhould be paid, and multiply his money by his time, the products being added together, facit 480. but this man hath made another bargaine to pay his money (viz 200 l.) ſo l content, and 110 at one moneth: this ſecond agreement, his money being multiplied by his time, facit 110. which if it ſhould bee divided by 200 the aggregat of the money, it would come forth in a ſhorter time of paiment, than if 480 had been divided by 200. therefore I take this 110 from 480. remaines 370. then I multiply B his debt and time of paiment together, then I add his money together, and the product of the multiplication together, facit 2800 but I leave out the cypher becaute I may leave out another in the products of the moneyes, remaines 50 and 280. then I take away the cyphers of the difference remaine 37. which I ſubſtract from 280. remaines 247 for divident, and 50 for divider.

(12.) A merchant doth owe 700 l 13 ſh 4 d. to be paid 133 l 13 ſh 4 d content, 277 l 13 ſh 4 d. at 4 moneths, and the reſt at 7 moneths, and he doth agree with his creditor to pay him 333 l 6 ſh 8 d content, to give him an obligation of 257 l 3 ſh 4 d. to be paid $\frac{1}{3}$ at 2 moneths, $\frac{1}{2}$ at 3 moneths, and the reſt at 4 moneths, and for the reſt to give him his owne obligation, the queſtion is at what time his obligation muſt be made to be paid that neither have advantage of the other, without reckoning intereſt upon intereſt.

$\frac{2}{3}$ . . 2 . . $\frac{2}{3}$	277.13.4	. . 4 . .	1110. 13. 4
$\frac{1}{4}$ . . 3 . . $\frac{3}{4}$	289. 6.8	. . 7 . .	2025. 6. 8
$\frac{1}{12}$ . . 4 . . $1\frac{2}{3}$	567.—.—		3136. —.—
$3,\frac{1}{2}$	199.13.4	. . —. .	———
	257. 3.4	. . $3,\frac{1}{11}$ . .	792. 18. $7\frac{1}{3}$
	456.16.8		
	110. 3.4	. .	2343. 1. $4\frac{3}{11}$
	2203		46861
	26440		562336
	7932	*Facit* at $21\frac{2120}{7932}$ moneths.	
			168702
			20069
			212

A merchant doth owe 700 l 13 sh 4 d. and should pay 133 l 13 sh 4 d content, but he makes a new bargaine, and in his new bargaine he should pay a great summe content, and therefore he doth not set downe his summe, but so much of the other summe in his next worke, as it is greater than 133 l 13 sh 4 d. but doth first begin with 277 l 13 sh 4 d at 7 moneths, facit 1110 l 13 sh 4 d. and the rest which is 289 l 6 sh 8 d at 7 moneths, facit 2025 l 6 sh 8 d. the money added together 567 l. and the product added together. facit 3136 l. then for the last bargaine he doth first set downe so much of his money he is to pay content, as it is greater than the money he should first pay content, which is 199 l 13 sh 4 d at no time, then 253 l 3 sh 4 d at $3.\frac{1}{2}$ moneths, which is found next the margent, this money and time multiplied together facit 792 l 18 sh $7.\frac{1}{3}$ d. now to know when the rest of the money of this last bargaine should be paid, I substract the money of this last bargaine, which is 456 l 16 sh 8 d from the money of the first bargaine, remaines 110 l 3 sh 4 d. I likewise substract the product of this last from the product of the first rests 46861. which is the product of the money remaining multiplied by the time the last obligation is to be made at, and to know it, I do divide (as the usuall manner is) the product by the money, as for first I bring 110 l 3 sh 4 d into pence, facit 26440. then I bring the denominator hither, and say, 3 times 4 is 12. leaving out the cypher, facit 7932. then I bring the other into pence, facit 562336. then into the fraction, facit 1687000. but I leave out the cypher, or the cypher of the divider which was left out, so that my divident is 168702 as in example.

QVESTIONS

QVESTIONS OF purified Gold or Silver in the fire.

(1.)

A Gold-ſmith hath an ingot of ſilver of 7 oz. fine weighing 28 oz. which he doth purifie in the fire untill there remaineth but 24 oz. the queſtion is how much fine ſilver the pound ſo purified containeth.

24 . . 28 . . 7

1 1/6

Facit 8 1/6 oz. fine.

Conſider that when an ingot is purified being 28 oz. and melted to 24. looke what reaſon is between 24 and 28 oz ſuch reaſon is between 7 oz. and the fineneſſe it is, which is 1.1/6 for 24 oz. is cõtained in 28 1.1/6 this 1.1/6 add to 7. facit 8.1/6 for if an ingot be 40 oz. of 6 oz. fine, then there is in it 20 oz. of ſilver and 20 oz. of copper, ſo that if you purifie it till it come to 20 oz. it is all fine ſilver, and if you purifie it to 30 oz. then it is 9 oz. fine.

(2.) A

This question and the like you must do it in this manner following, first substract the fineneſſe it is from the fineneſſe it muſt bee, and let the remainder bee your middle number, and the fineſſe that it ſhall be your firſt number, then ſay if 7 loſe 2. what ſhall 69 loſes facit 15. $\frac{5}{7}$ ounce.

(2) A Gold-ſmith hath an ingot of ſilver of 5 oz. fine weighing 69 oz. the queſtion is how much copper he muſt conſume in the fire to make it be of 7 ounces fine.

7
5

7 . . 2 . . 69
138

Facit 19$\frac{5}{7}$ oz.

QVESTIONS

QVESTIONS OF OF MIXTIONS OF GOLD and Silver, and other Metals.

(1.)

A Gold-ſmith hath an ingot of fine ſilver weighing 39.oz. the queſtion is how much copper he muſt mixe with it, that the pound mixed containe 9 ounces fine.

9 . . 3 . . 39

Facit 13 oz. of copper.

First conſider, that the pound is 12 oz. ſo that if your ingot bee 39 oz. fine ſilver, and you would know how much copper you ſhould mixe with it to make it 9 oz. fine, you muſt conſider that if it bee 9 oz. fine, that is, if 11 have 9 oz fine, it muſt have 3 copper, therefore you may place your queſtion ut ſupra, and this queſtion will ſerve for 5, 6 or 8 oz. fine, or the like memento.

(2.) A gold-ſmith hath 40 oz. of copper, the queſtion is how much fine ſilver he muſt mixe with it, that the pound mixed containe 5 oz. fine.

7 . . 5 . . 40

200

Facit $28\frac{4}{7}$ oz. of fine ſilver.

Conſider if there be 5 oz. of ſilver, there muſt be 7 oz of copper, and becauſe that there muſt be more copper, I ſet the biggeſt number formoſt, and ſay, as 7 is to 5. ſo is 40 oz. of copper to the quantity of ſilver which muſt be put to it.

(3.) A Gold-ſmith hath an Ingot of ſilver of 7 oz. fine, weighing 40 oz. the queſtion is how much fine ſilver he muſt mixe with it to make it of 9 oz. fine.

In this queſtion and the like firſt ſet downe the fineneſſe in the third place, the fineneſſe of the ſilver that is to be mingled with it, & in the middle by themſelves ſomewhat high place the fineneſſe it muſt be of, then looke how much the firſt number is baſer than the middle number, let that bee your middle number in working, and then looke how much the third number is finer than the middle number, let that be your firſt number, ſaying, if 3 require two oz what will the whole Ingot require which is 40 oz, facit 26 oz. 13 d 6 gr.

9
7 . . 12
3 . . 2 . . 40
Facit 26 oz. 23 d. 8 gr.

(4.) A merchant hath two ſorts of tin, to ſay 9 C at 54 ſh the hundred: and other at 49 ſh the hundred, the queſtion is how much of that he muſt mix with the 9 C weight of the firſt, that the hundred mixed come to 52 ſhillings.

In this queſtion and the like you muſt firſt ſet down the good you will have it to bee of, and a little lower on the left hand the goodneſſe it is, and as low on the right hand the goodneſſe of the other that you will mixe with the firſt, and looke how much the firſt number is worſe than the goodneſſe it ſhall be, let it be the middle number in working, and looke how much the goodneſſe of that which muſt be mixed with it is better than the fineneſſe it ſhall be, let that be your firſt number. and the third number muſt be the maſſe wherewith you will have the metall mixed, then ſay, if 3 require 2. what will 9 require? facit 6 C

54 . . 49
52
3 . . 2 . . 9
3
Facit 6 C weight.

(5.) If a hundred weight of lead coſt 11 ſh. how much lead muſt I mixe with 1874 L of tin at 53 ſh the hundred to make it be worth 51 ſhillings the hundred.

53 . . 11
· 51

40 . . 2 . . 1874
Facit $93\frac{7}{18}$ L.

This queſtion is done altogether like the laſt, provided that the maſſe which is the third number, that ſort muſt bee the number plac'd at the left hand ſide of the goodneſſe it muſt be and the values they be, how much it is either better or worſe than it ſhall be, muſt be the middle number, as in the laſt queſtion, but that this firſt number is better than the middle.

(6.) A gold-ſmith hath an Ingot of ſilver of 8 oz. fine weighing 78 oz. 9 d. the queſtion is how much ſilver of 11 oz. fine he muſt mixe with it, that the ounce mixed containe $9\frac{1}{2}$ oz. fine.

8 . . 11
$9\frac{1}{2}$ *Facit* 78 oz. 9 pence.

This queſtion and all other the like are done as the 2 latter queſtions are, and becauſe that the fineneſſe it ſhalbe is much better than the firſt, as the latter is better than the fineneſſe it ſhalbe, and in regard the firſt and ſecond numbers wilbe in reaſon of equality, and therefore it needs no worke, becauſe the fourth number muſt be equall to the third.

(7) A gold-ſmith hath fine gold of 24 kar. fine, and he will make a ring of 12 d weight of 19 kar. fine, the queſtion is how much of his fine gold muſt go to it, and alſo how much delee.

24 . . 19 . . 12
Facit $9\frac{1}{2}$ d of fine gold.
and $2\frac{1}{2}$ d of delee.

Conſider that this queſtion and the like to it, if he had made the ingot of 12 d weight of 24 kar. then had need of no delee, but he will have it of 19 kar. and therefore as 24 kar. is to 19. ſo is 12 pence to the quantity of fine gold, that you muſt have, the reſt muſt be delee.

This question and the like before you must consider what difference there is, for looke how much 8 oz. fine is finer than 6.1 oz. fine, so much of the ingot you must take, the rest must be delee.

(8.) A gold-smith hath an ingot of silver of 8 oz fine, and he will make another ingot weighing 40 oz. of $6\frac{1}{2}$ oz. fine, the question is how much he must take of the aforesaid ingot, and also how much copper, to make the ingot.

8 . . $6\frac{1}{2}$ . . 40

Facit $32\frac{1}{2}$ oz. of the ingot.
and $7\frac{1}{2}$ oz. of copper.

First place the two fineneſſe one against the other, with two prickes by, and the fineneſſe it shalbe by themselves a little lower or higher, then consider that the 1 is coarser than the middle number by 4. and the other finer by 3 so that both added together, make 7. then say if 7 make 4. what doth 8 make, as in example.

(9.) A gold-smith hath gold of 17 kar. fine, and he will make a ring of 8 d weight of 21 kar. fine, the question is how much gold of 17 kar. fine must goe to it, and also how much fine gold of 24 kar. fine.

17 . . 21
24

7 . . 3 . . 8

Facit 3 d $20\frac{4}{7}$ gr. of 17 kar. fine.
and 4 d $13\frac{3}{7}$ gr. of 24 kar. fine.

Here you must consider that the ingot must bee made of 19 kar. fine, weighing 8 d in gold, or 22 kar. if the ring should be made of 22 kar. then the 8 d should be all of that gold, but it must bee made of 19 kar. therefore it and there some must have say, as 22 kar is to 19 kar. so is the 8 d to the quantity of gold to the 22 kar. the delee, the the ring which is 12 d. weighing 2. 2 d. the rest must be delee, as in example. must be in $\frac{2}{11}$

(10.) A gold-smith hath gold of 22 kar. fine, and he will make a ring weighing 14 d of 19 kar fine, the question is how much gold of 22 kar. fine must go to it, and also how much delee.

22 . . 19 . . 14
11 7

133

Facit 12 d $2\frac{2}{11}$ gr. of 22 kar. fine.
and 1 d $21\frac{9}{11}$ gr. of delee.

(11.)

(11.) A gold-ſmith hath ſilver of 8 oz. fine, and of 11 oz. 4 d fine, the queſtion is how much he muſt take of each ſort to make ſilver of 10 oz.

8 . . 11 . 4
10
1 . 4 . . 2

Facit as often as he doth take 2 oz. of 11 oz. 4 d fine, he muſt take 1 oz. 4 d of 8 oz. fine.

In this queſtion (as in the other) place the 2 fineneſſe one againſt the other, and the fineneſſe it ſhall be, by taking a little higher or lower, then ſee how much the firſt number is either finer or coarſer than the middle number, and place the difference in the middle, then place the delee by the ſecond and third number in the firſt place, as in example.

(12.) A gold-ſmith hath ſilver of 7 oz. & of 11 oz. fine, the queſtion is how much he muſt take of each ſort to make an Ingot weying 50 oz. of 10 oz. fine.

11 . . 7
10
4 . . 1 . . 50

Facit 12 oz. 10 d of 7 oz. fine, and 37 oz. 10 d of 11 oz. fine.

This queſtion (as moſt of the queſtions before of mixtions) muſt have both fineneſſe one againſt the other, and the finer it ſhall bee, take a litle higher or lower with a line under them, and the delee by the firſt and ſecond doing, ſee how much you muſt take of the third fineneſſe being placed under the third number, add the delee by the third, and ſecond number doth ſee how much you muſt take for the ſecond number being placed under the firſt number, as in example.

(13.) A gold-ſmith hath ſilver of 7 oz. 8 d fine, of 8 oz. 3 d 11 gr. fine, and of 10 oz. 11 d 13 gr. fine, the queſtion is how much he muſt take of each ſort to make ſilver of 9 oz. fine.

7 . 8 . . 8 . 3 . 11 . . 10 . 11 . 13
9
1 . 11 . 13 . . 1 . 11 . 13 . . 1 . 12 . —
—. 16 . 13

In this queſtion & the like where many fineneſſes are to be mingled together, alway compare a leſſe with a greater, as in this queſtion there are two numbers leſſe than the fineneſſe it muſt be, and one number better than the fineneſſe it muſt be, as in example.

Facit he muſt take as much of 7 oz 8 d fine as of 8 oz. 3 d 11 gr. fine, and as often as he doth take 1 oz. 11 d 13 gr. of each of thoſe ſorts he muſt take 2 oz. 8 d 13 gr. of 10 oz. 11 d. 13 gr. fine.

(14.) A gold-ſmith hath two ſorts of gold, to ſay of 15 kar. in gold, and 4 kar. in ſilver, and of 21 kar. in gold and 2 kar. in ſilver, the queſtion is how much he muſt take of each ſort to make a cup of 20 kar. in gold, and alſo how much ſilver the ounce of that cup ſhall containe.

I place the two fineneſſes of the gold as formerly, right one againſt another, and a little lower by themſelves the fineneſſe it muſt bee, then I compare them together, and I find that with 1 oz. of 15 kar. I muſt take 5 oz. of 21 kar. then I conſider that if I take 5 oz. of 21 kar. I take 5 times 2 oz of ſilver, facit 10 oz. which I place under the 5 oz. then with the 1 oz. of 15 kar. I receive 4 oz of ſilver, then ſay if 6 oz. of mixe hath 14 kar. of ſilver, what hath 1 oz facit 2 1/3 kar. of ſilver.

15 . . 21 — 20 — 1 . . 5 — 4 . . 10

6 . . 14 . . 1

Facit the oz. ſhall containe 2 1/3 kar. in ſilver, and he muſt take 5 times as much of 21 kar. fine as of 15 kar. fine.

(15.) A gold-ſmith hath 4 ſorts of gold, to ſay of 12 kar. 15 kar. 18 kar. and 21 kar. fine, and he will make a cup of 16 kar. fine weying 70 oz. the queſtion is how much gold he muſt take of each ſort.

First hee placeth the fineneſſe as hee did in the other two former queſtions, and the fineneſſe it ſhalbe making the middle number under or above them, comparing them together, a leſſer alwaies with a greater, ſet the differences acroſſe then add all the differences together, facit 12 then ſay if 12 require 4. what ſhall 70 in working I take the 1 of 12. facit 3 for divider, and 1/3 of 4. facit 1. then remaines to divide 70 by 3. facit 23. 1/3 ounce of 21 kar. fine, I take the 1/3 of it for 1. then double the latter for 2. and for 5 double the quantity and add in the quotus of the 5.

12 . . 15 . . 18 . . 21 — 16 — 5 . . 2 . . 1 . . 4

(12 . . 70 . . 4

Facit 23 1/3 oz. of 21 kar.
and 5 5/6 oz. of 18 kar.
and 11 2/3 oz. of 15 kar.
and 29 1/6 oz. of 12 kar.

(16.) A

(16.) A gold-ſmith hath two ingots of ſilver, one of 3 ounces fine weying 50 oz. another of 5 oz. fine weighing 40 ounces, how much fine ſilver muſt he mixe with both thoſe ingots, to make them of ſeven ounces fine.

To mixe metals together, obſerve the former rules, which is to compare a leſſe with a greater, and I find I muſt take with 5 oz. of 3 oz. fine 4 oz. of fine ſilver, and with 5 oz. of 5 oz. fine 2 oz. of fine ſilver, then ſay, if 5 require 4. what will 50 oz. facit 40. and if 5 doe require 2. what will 40. facit 16.

3 . 5 . 12 — 7 — 5 . 5 . 4 — 2

5 . . 4 . . 50 *Facit* 40 oz.

5 . . 2 . . 40 *Facit* 16 oz.

Facit he muſt mixe with them 56 oz. of fine ſilver.

(17.) A gold-ſmith hath two Ingots of ſilver, one of 11 oz. fine weighing 96 oz. another of 9 oz. fine weighing 81 oz. how much copper muſt he mixe with both thoſe Ingots, to make them of 7 ounces fine.

This queſtion is in the like manner wrought, little difference at all.

11 . 9 . 2 — 7 — 7 . 7 . 4 — 2

7 . . 4 . . 96 — 384 *Facit* $54\frac{6}{7}$ oz.

7 . . 2 . . 81 — 162 *Facit* $23\frac{1}{7}$ oz.

Facit he muſt mixe with them 78 oz. of copper.

(18.) A

(18.) A gold-smith hath two Ingots of silver one of five ounces fine, the other of seven ounces, fine, and he will take three times as much of that of five ounces fine as of the other of seven ounces fine to make an Ingot weighing 50 ounces, of 9 ounces fine, the question is how much fine silver he must mixe with it, and also how much he must take of each Ingot.

5 $6\frac{1}{2}$ . . $3\frac{1}{2}$ . . 50

3 13 350

15 *Facit* $26\frac{1}{13}$ oz. of fine silver.

7 $6\frac{1}{2}$ . . 3 . . 50

22 *Facit* $23\frac{1}{11}$ oz.

$5\frac{1}{2}$ *Facit* $5\frac{1}{11}$ oz. of 7 oz. fine.
and $17\frac{4}{11}$ oz. of 5 oz. fine.

First set downe 5 oz. and the 3 under it to multiply it, facit 15. and then the 1 oz. of 7 oz. facit 22 oz. by 4 viz 2 of 5. and 1 of 7 oz. then 4 oz. by 22 fine, 1 oz. then of $5\frac{1}{2}$ and then in a place aside I mixe them and bring them to 9 oz. fine, and it requires 3 of $5\frac{1}{2}$ and $3\frac{1}{2}$ of fine silver both parcels added together, facit $6\frac{1}{2}$ then if $6\frac{1}{2}$ oz. require 3 oz. of fine, what shall 50 oz. facit $26\frac{12}{13}$ ounce fine, then subtract that from 50. the remainder must be of $5\frac{1}{2}$ which hath in it $3\frac{3}{11}$ oz. of 5 oz. fine, and 1 of 7 oz. fine, facit $23\frac{1}{11}$ then take the 1 of this $23\frac{1}{11}$ facit $5.10\frac{1}{13}$ and so much you must have at 7 oz. fine, and then multiply that by 3. facit $17.4\frac{4}{11}$ ounce of 5 ounce fine.

(19.) A gold-smith hath two Ingots of silver, one of foure ounces five pence fine, the other of five ounce 13 pence 8 graines fine, and he will take of one as much as of another to make an Ingot weighing 30 ounces of nine ounces fine, the questi-

on

on is how much fine silver he must have with it, and also how much of each Ingot.

4 . 5 . —	7 . — . 20 . . 4 . — . 20 . . 30	
5 . 13 . 8	140	80
9 . 18 . 8	845	485
4 . 19 . 4	169	*Facit* $17\frac{37}{169}$ oz. fine silver.

2910
1227
3

7 . — . 20 . . $1\frac{1}{3}$ . . 30

$12\frac{133}{169}$

and $6\frac{66}{169}$ oz. of each Ingot.

Set downe the two fineneſſe, and add them together, facit 9 oz. 17 d 8 gr. then take 1 of it, facit 4 oz. 19 d 4 gr. and that fineneſſe 1 oz. is of the two fineneſſes being mixed together, there is a place ſet as you did the laſt queſtion, comparing this with fine ſilver, and bringing it to 9 oz fine, and I find you muſt take 3 oz. of the 4 oz. 19 d 4 gr. fine, and 4 oz. 10 gr. of fine ſilver added together, facit 7 oz. 20 gr. then ſay, if 7 oz. 20 gr. require 4 oz and 20 gr what will 30 oz. to worke it, firſt multiply by 20 facit 140 this you ſhould multiply by 24 to bring it into graines, but to ſhorten the worke, I bring it into 4 graine peeces, and multiply it by 6, and I account the 20 graines to be 5. facit 845 for divider, in like manner I do the middle number, facit 845 then I take the $\frac{1}{5}$ of my divider facit 169. and the $\frac{1}{5}$ of 30. facit 6. then multiply 845 by 6. facit 2910 for divident, and 169 for divider.

(20.) A gold-ſmith hath foure ſorts of gold, to ſay of 19 kar. 20 kar. 21 kar. and of 23 kar fine, and he will make a cup weighing 45 ounces of 16 kar. fine, the queſtion is how much he muſt take of each ſort, and alſo how much delee.

19 . 20 . 21 . 23 . —
16

16 . 16 . 16 . 16 . 3
4
5
7

83 . . 19 . . 45
45

855

Facit $10\frac{25}{83}$ oz. of delee.

83 . . 16 . . 45

Facit $8\frac{56}{83}$ oz. of each ſort.

720
56

Note that this queſtion and ſuch like may have many anſwers, yet all true, &c.

First compare all your fineneſſes together and delee to bring them to 16 oz. fine, and it doth require of each ſort 16 oz and 19 oz. of delee, then ſay if 83 which is the aggregat of all the parcels requir: 19 oz delee, which is the weight that muſt be, to woske this, multiply the 19 by 45. facit 855 which divide by 83. facit $10.\frac{25}{83}$ of delee, then ſay againe, if 83 require 16. what ſhall 45. facit $8.\frac{56}{83}$ of each ſort, which you may per cento by 16 apeece.

(21.) A gold-ſmith hath two ingots of ſilver, one of 5 ounces 12 d fine weighing 40 ounces, the other of 6 ounce three pence fine weighing 46 ounces, the queſtion is how much ſilver of 11 ounces 4 d fine he muſt mixe with both thoſe Ingots, that the pound mixed containe 8 ounces fine one with another.

5 . 12 . . 6 . 3 . . 11 . 4 3 . 4 . . 2 . 8 . . 40

8 16 12 10

3 . 4 . . 3 . 4 . . 2 . 8 *Facit* 30 oz.

1 . 17 3 . 4 . . 1 . 17 . . 46

Facit he muſt mixe with them 56 $\frac{19}{33}$ oz. 64 37 851

212. 3

Facit oz. 26. 19

Firſt compare them together as the uſuall manner is then ſay if 3 oz. 4 d require 2 oz. 8 d. what 40. to worke it firſt bring the 3 oz 4 d into 4 penny weights, ſaying, 5 times 3 is 15. and 1 is 16 for divider, and ſo do to the middle number, facit 12. then conſider that 12 is leſſe than 16 by 4. which is $\frac{1}{4}$ of 16. and therefore the facit to the worke muſt bee the $\frac{1}{4}$ of 40 leſſe than 40 facit 30 oz then for the ſecond worke bring the 3 oz 4 d into penny weights, facit 64. and ſo alſo the middle number facit 37. for third number 46 I take the $\frac{1}{2}$ of it, multiplying it by 37. facit 851 for divident, and $\frac{1}{2}$ of 64 for divider, facit 32. then I divide 851 by 4 and 8. becauſe 4 times 8 is 32.

(22.) A gold-ſmith hath ſilver of five ounces fine, of ſeven ounces 8 pence fine, and of 10 ounces 9 pence 7 graines fine, the queſtion is how much he muſt take of each ſort, to make an Ingot weighing 47 ounces of 9 ounces fine.

8. 10. 14 . . 5. 12 . . 47

5 . 7. 8 . . 10. 9. 7 170 112
9 2047 1344

1. 9. 7 . . 1. 9. 7 . . 4.— *Facit* oz. $30\frac{1718}{2047}$ of 10 oz. 9 d 7 gr. fine.

1. 12 63168
175

8. 10. 14 . . 1. 9. 7 . . 47

$16\frac{289}{2047}$

Facit $8\frac{289}{4094}$ oz. of 7 oz. 8 d fine and as much of five ounces fine.

First compare all the fineneſſe together, and then add all your parcels together, viz. the quantities you muſt have of each, facit 8 oz. 10 d 14 gr. then ſay if 8 oz 10 d 14 gr requre 5 oz. 12 d. what will 47 oz. to worke it bring the 8 oz 10 d into penny weights, as you do pounds into ſhillings, facit 170 then it ſhould be multiplied by 24 to bring it into graines, but I multiply it by 12. and ſo bring it into halfe graines, facit 2097. and the middle I bring into penny weights and 2 graines peeces (as I did the firſt number of this worke) facit 1344. multiplied by 47 facit 63168 for divident.

(23.) A gold-ſmith hath an Ingot of ſilver of five ounces fine weighing 68 ounces, of the which he doth take away 20 oz. and in the place putteth as much other ſilver of 7 oz. 8 d fine, and then of that mixtion he taketh alſo away 20 oz. and in the place putteth as much other ſilver of 11 oz. 16 d fine, the queſtion is how much fine ſilver the pound of this laſt Ingot doth containe.

12 . . 5 . . 48 *Facit* 20 oz.
12 . . 7.8 . . 20 *Facit* $12\frac{1}{3}$ oz.
148

68 . . $32\frac{1}{3}$ . . 48

12 . . 11.16 . . 20 *Facit* $22\frac{14}{17}$ oz.

236 1552
Facit $19\frac{1}{3}$ oz. 296
5

68 . . $42\frac{25}{\frac{14}{17}}$ . . 12
17 3

17 *Facit* 7 oz. 9 d $23\frac{49}{\frac{14}{17}}$ gr. fine.

289 216706
24499
8821
274
66
9

First I take away the 20 oz from the 68. refts 48 then I ſay, if 12 have 5 oz. what hath 48. facit 20. then I put to 20 oz. of 7 oz 8 d fine, facit $32.\frac{1}{3}$ added to the 20 facit $32.\frac{1}{3}$ then I ſay, if 64 have $32.\frac{1}{3}$ fine, what hath 48. for ſo much the ingot is when the 20 oz. againe are taken away, facit $22.\frac{14}{17}$ ounce, then I put to 20 oz. of 11 oz 16 d. and which hath 19 2 ounces, fine added to the $22.\frac{1}{3}$ fine facit $42.\frac{25}{\frac{14}{17}}$ ounce fine, and the ingot is 68. then I ſay, if 68 have $42.\frac{25}{\frac{14}{17}}$ ounce fine, what hath 12 oz. the workes are eaſie, but the laſt is ſomewhat harder, and thus wrought, firſt I take the $\frac{1}{4}$ of 68. facit 17. and 1 of 12 is 3. then I ſhould carry 3 to the middle number, and carry $\frac{3}{4}$ to the firſt number, but I omit multiplying the middle number by 3. and carry $\frac{1}{4}$ part of 51 to the firſt number, which is 17 then 17 times 17 is 289 for divident, then reduce the middle number into the fraction, facit 2167 for divident, as in example.

QVESTIONS

Fist consider that the losing foure moneths is nothing els but that hee is 4 moneths gainer of that hee gained, and therefore he saith, if 12 moneths gaine 12. what doth foure moneths? then again, if 100 do gaine that, what doth 65. facit 2 3/12 added to the 65 facit 67 2/12 in working the 12, and the 12 do ballance each other, then I multiply 65 by 4 and divide the product by 100.

he doth lose 4 moneths, without reckoning gaine of gaines.

12 . . 12 . . 4
100 . . — . . 65

260

Facit at 67 1/12 d sterl.

Fist consider that two 65 ballance, remaines one for divider, the first for 40 d of the 46. take the 1 of 42. because 40 d is the 1/6 l. and for 6 take 1/40 of 42 facit 2. remaines 12 sixpences, which is 6 d.

(9.) If the exchange from London to Francfort be at 46 d sterl. and from Franckfort to Lions at 92 kreutzers for one crowne de marke, the question is at what price it doth make the Exchange from London to Lions for one marke of gold of 65 crownes.

65 . . 46 . . 92
1 . . — . . 65

15 . 6 . 8
2 . 6 . —

Facit at l 17 . 12 . 8 sterl.

(10.) A merchant at London doth take up money by exchange for Hambourgh at 9 marke 1 sh Lubish, and when the day of paiment doth come at Hambourgh, the factor doth take up so much there by exchange for London at 8 marke 12 sh Lubish, the question is how much he doth gaine or lose per cento per anno, when he hath occupied the money 4 moneths, and gained therewith after 18 per cento per anno, without reckoning gaine upon gaine.

9 . 1
8 . 12

8.12 . . —.5 . . 100
4 . . —— . . 12

140 150
10 5/7

First take the 1 of 1/4 4 and of 12. facit 1—3. then multiply the 8 markes by 16 and add in 12. facit 140 for divider, then three times 5 is 15. to multiply this 15 by 100 I ſhould preſixe two cyphers, but for one of them I cut off a cypher from 140. and prefix but one before 15. then I divide 150 by 14 he loſt, facit 10 5/7 this 10 5/7 being ſubſtracted from 58 the gaines that he makes of the money, facit 7 2/7 per cento per anno.

Facit he doth gaine $7\frac{2}{7}$ per cento per anno.

(11.) A merchant at London doth deliver money by exchange for Dantzig at 162 groſſe poliſh, and when the day of paiment doth come at Dantzig, the factor doth deliver it againe by exchange for London at 158 groſſe poliſh, the queſtion is how much he doth win per cento per anno, without reckoning gaine upon gaine, when he doth forbeare his money three moneths.

First the 1 of is 1, 1/3 and 1 of 12 is 4. then 1/2 of 158 is 79 for divider, and 1 of 4 is 2. remains 2 and 4 and 100 to bee multiplied together for divident.

162
158

158 . . 4 . . 100
3 . . —. . 12

79 800

Facit $10\frac{10}{79}$ per cento per anno.

(12.) A merchant at London doth deliver money by exchange for Antwerpe at 24 ſhillings one penny Flemmiſh, and when the day of paiment doth come at Antwerpe, the factor doth deliver

it againe for London at 23 ſh 6 d Flemmiſh, the queſtion is how much he doth gaine per cento per anno, when he doth loſe two moneths, without reckoning gaine upon gaine.

First bring the 23 shillings 6 d into sixepences facit 47 for divider then this should be multiplyed by 2 monethes but insteed thereof I divide 12 by 2 facit 6 then I account the 7 to be $1\frac{1}{3}$ this 6 should be carried to the divider but insteed thereof I divide 6 by it then the $1\frac{1}{3}$ being brought into the fraction facit 7 multiply by 100 facit 700 for divident.

24 . 1
23 . 6

23 . 6 . . — . 7 . . 100
2 . . ——— . . 12

47 *Facit* $14\frac{4}{47}$ per cento per anno.

700
232
4

(13.) A merchant at London doth deliver money by exchange for Hambourgh at 9 marke 2 ſh Lubiſh, and when the day of paiment at Hambourgh doth come, the factor doth returne it by exchange for London at 8 mark 10 ſh Lubiſh, the queſtion is how much he doth gaine per cento per anno, when he doth loſe 4 moneths, without reckoning gaine upon gaine.

First bring the 8 marks 10 ſh into 2 ſh peeces which is done by multiplying it by the $\frac{1}{2}$ of 10 laying 8 times 8 is 64 and the 10 ſh I account for 5 ſh facit 69 for divider then it ſhould be multiplyed 4 monethes but insteed thereof I divide the middle number 4 by the $\frac{1}{2}$ of 8 ſh being 4 then I multiply the 12 by 100 facit 1200 for divident.

9 . 2
8 . 10

8 . 10 . . — . 8 . . 100
4 . . ——— . . 12

69 *Facit* $17\frac{9}{23}$ per cento per anno.

1200
517
2

(14) A

(14.) A merchant at Hambourgh doth deliver money by exchange for London at 8 marke 12 ſh Lubiſh, the queſtion is at what price the factor muſt make the returne by exchange, when the day of paiment at London doth come, to gaine 12 per cento per anno, when he doth loſe 4 moneths, without reckoning gaine upon gaine.

This queſtion conſiſteth of one worke for if 12 facit 12. 4 facit 4 therefore I ſay if 100 make 104 what ſhal 8 marks 12 ſh firſt I conſider that 104 is 4 & 100 parts more then 100 which is 1 and therefore $\frac{1}{25}$ I take the 1 of 8 $\frac{1}{25}$ markes 12 ſh and adde to it to divide by 25 I doe it by 5 and 5 becauſe that 5 tintes 5 is 25 as in example.

12 . . 12 . . 4
100 . . 104 . . 8. 12
1. 12
5. $7\frac{1}{5}$

Facit at 9 marke 1 ſh $7\frac{1}{5}$ pence Lubiſh.

(15.) A merchant at London doth take up money by exchange for Hambourgh at 9 mark 1 ſh Lubiſh, and for the paiment thereof he doth ſend clothes to Hambourgh which coſt 61 ſterling the cloth, and doth ſell them there for 30 dallers the cloth at 31 ſh the daller, the queſtion is whether he doth win or loſe, and how much per cento.

First bring the 9 markes 1 ſh into ſhillings being multipled 16 145 whereof I take the $\frac{1}{5}$ facit 29 for divider then I take $\frac{1}{7}$ of facit 6 which doth ballance the 6 remaines 31 to bee multiplyed by 100 for dividend facit 3100 which divide by 29.

9. 1 . . 1 . . 30
16 31
145
6 . . — . . 100
29 106
3100
226

Facit he doth win $6\frac{26}{29}$ per cento.

(16.) A merchant at London doth deliver money by exchange for Antwerpe at 24 ſhillings 1 d flemmiſh, the queſtion is at what price the factor muſt make the return by exchange from Antwerpe to gaine 10 per cento per anno, when he doth loſe 4 moneths without reckoning gaine upon gaine.

First conſider the facit of the firſt worke is $3\frac{1}{2}$ then ſay, if $103\frac{1}{3}$ come of 100 whereof come 24 ſh 1 d to worke it firſt bring $103\frac{1}{3}$ into threepences facit 310 for divider, then multiply 24 ſh 1 d by 12. facit 289. then by 100. which is done by prefiging one cypher, facit 2890 for dividend, & Cutting of the divider for the other cypher of 100. the 2890 being divided by 310 facit 93 d in the quotus, and 7 remaines, which I mukiply by 3 the denominator of the firſt number, facit 21. then the 95 is 7 ſh 9 d multiply by 3 the firſt denominator facit 23 ſh 3 d $\frac{21}{31}$

$12 \;..\; 10 \;..\; 4$ *Facit* $3\frac{1}{3}$

$103\frac{1}{3} \;..\; 100 \;..\; 24.\ 1$

310 — 93

28901

107

2

Facit at 23 ſh $3\frac{21}{31}$ pence flemmiſh.

(17.) A merchant at London doth take up money by exchange for Venice at 62 pence ſterling, and for the paiment thereof he doth ſend kerſeys to Venice which coſt with all charges 55 ſhillings ſter the kerſey, the queſtion is how much he doth win or loſe per cento, when he doth ſell the kerſey there for $9\frac{1}{2}$ ducats.

1 . . 62 . . $9\frac{1}{2}$
55 . . — . . 100

11 | 190
62

11780
$981\frac{7}{11}$
$89\frac{8}{11}$

First if one duckat be 62 d what is $9\frac{1}{2}$ then if 55 make the facit of the firſt number what doth the 100 to worke it firſt take the 1 of 55 facit 11 for divider then 1 of 100 facit 20 then I ſhould carry the denominator to the firſt 110 viz to the divider but inſteed thereof I divide 20 by it facit 10 then I bring the $9\frac{1}{2}$ into a whole number facit 18 then I preſixe a cypher to it for 10 then by 62 facit 11780 then divide it by 12 to bring it into ſhillings and then by the divider facit 86.8 which I ſubſtract from 100 facit he doth loſe 10 25

Facit he doth loſe $10\frac{2}{33}$ per cento.

(18.) A merchant at London doth take up money by exchange for Spaine at 70 pence ſterling for 375 maravidis, and the ſame money he doth deliver for Aquila at 67 pence ſterling for one duckat carlini, the queſtion is how much money he muſt take up at London for Spaine, to receive at Aquila 526 duckats two carlini and 3 quadrins, when one duckat is 10 carlini, one carlini 6 celli, and one celli 5 quadrins, and alſo at what price he doth bring the exchange from Spaine to Aquila for one duckat carlini.

70 . . 375 . . 67
14 75

7 5025
2512 1/2

First take the 1 of 70 facit 14 and 1/2 of 375 facit 75 then multiply 75 by 67 facit 5025 then take 1 of 14 facit 7 for divider and take the 1/2 of 5025 for divident facit 2512 1/2 divide by 7 facit 358 13/14 marravidis and at that rate hee brings the exchange from Spaine to equall the same of one ducka: be 67 d what is 526 duckats 2 karlie & 39 quadrines but for the third number I consider that if one duckat had beene 20 ß and 526 duckats had beene 526 the 2 karlin is 4 ß and the 3 quadrines is the 3/4 of 4 gr. so is 2 2/4 d which I set downe for the third number then I take for 60 d the 1/4 of it and for 6 d the 1/10 of that and for 1 d the 1/6 of that as in example.

Facit he doth bring the exchange from Spaine to Aquila at 358 13/14 maravidis.

1 . . 67 . . 526 . 4 . 2 2/4

131 . 11 . 3/4 . . 60
13 . 3 . 1 1/2 . . 26
2 . 3 . 10 21/120

Facit 146 . 18 7/120 ßter. he must take up.

(19.) A merchant at London doth deliver money by exchange for Francfort at 46 d ßterl. for 65 kreutzers, and from thence he doth deliver it for Venice at 130 florins for 100 duckats, the question is at what price he doth make the exchange from London to Venice.

First consider that the 2 cyphers of the divider to ballance the 2 cyphers of the divident then say 1/3 part of 65 is 5 and 1/3 part of 13 is 1 d 1/3 remaines 5 for divider & 46 to be multiplyed by 6 for divident then divide 46 to be multiplyed by 6 for divident saying 6 times 46 is 276 for divident.

65 . . 46 . . 60
1 . . — . . 130
100 . . — . . 1

5 276

Facit at 56 1/5 pence ßterling.

(20.) A

(20.) If the exchange from Venice to London be at 64 d ſterling, and from London to Noremberge at 46 d ſterling, at what price doth it make the exchange from Venice to Noremberge.

First cut of cypher from 100 and other from 60 then multiply 40 by 6 facit 276 then multiply 64 by 65 facit 4160 then preſixe an other cypher for the remainder of 100 facit 41600 for divident.

1 . . 64 . . 100
46 . . 65 . . —
60 . . 1 . . —

276 *Facit* at $150\frac{104}{276}$ florins.

41600
140
2

(21.) A merchant at London doth deliver money by exchange for Spaine at 70 pence ſterling for 375 maravidis, and from Spaine he doth deliver it for Antwerpe at 350 maravidis for 6 ſh Flemmiſh, and from Antwerpe he doth deliver it againe for London at 23 ſhillings 6 d Flemmiſh, and then doth find to gaine 10 per cento per anno, the queſtion is how much time he hath loſt, without reckoning gaine upon gaine.

375 . . 70 . . 350
20 . . 23.6 . . — —
72 . . — — . . 1|00
75

54|00 164½ 10 . . 12 . . 6 67/108

715

35 9

5757⅓ 90
959 7/12
106 67/108

Facit 7 12/18 moneths.

This queſtion conſiſteth of 3 rules of 3. and is thus wrought, take firſt the 1 of 375. facit 75. then the Cypher of 20 doth ballance the Cypher of the 70. then the 1/5 of 750 is 70. then I account the 23 ſh 6 d to be 23. 1/2 then I ſhould carry the denominator to the divider, but inſteed thereof I divide 70 the 1/3 of 370. facit 35. which I place vnder the 164. 1/2 the product of 23. 1/2 multiplyed by 7 the 1/3 of 70 then multiply 164. 1/2 by 35. facit 575. 1/3 for divident, which I divide by 6 and 9. becauſe 6 times 9 is 54. and 100 makes 106. 2/3 and the 67 ſo the gaine is 6. and 67/108 then ſay if 100 bring in 12. in how long time 6. and 67/108 thus wrought, firſt I bring the 6 67/108 into the fraction facit 7015. then I ſhou'd carry 108 to the divider, but becauſe that 108 conſiſteth of 9 and 12. I omit multiplying 715 by 12. but doe multiply 10 by the 1 part of 108. which is 9. facit 90 for divider, then multiply and divide facit 7. 12/18.

(21.) A merchant at London doth deliver money by exchange for Hambourgh at 9 marke 2 ſh Lubiſh, and from thence he doth deliver it for Antwerpe at 7 mark 13 ſh Lubiſh for one pound flemmiſh, and from Antwerpe he doth deliver it for Venice at 72 d Flemmiſh, and from Venice he doth deliver it for Rome at 91 duckats de camera the 100 duckats correnti, and from Rome he doth deliver it for London at 72 d ſterling, the queſtion is how much he doth win or loſe per cento per anno, without

without reckoning gaine upon gaine when he doth loſe 8 moneths.

7 . 13 . . 240 . . 9.2

125 146

72 . . 1 . .

100 . . 91 . .

1 . . 72 . . .

240 100

8 . . 106 $\frac{36}{125}$ . . 12

13286

73

Facit he doth gaine 9 $\frac{54}{125}$ per cento per anno.

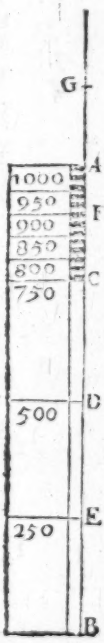
First bring the first and third number into ſhillings by multiplying them by 16 facit 25 & 146 then conſider that 240 the middle of the firſt rule doe ballance 240 one of the dividers & a hundred ballance and 72 two ballance remaines 125 for devider & 146 multiplyed by 91 for divident facit 13286 for dividente then being multiplyed and divided facit 106 $\frac{36}{125}$ which 6 and 36 gaines vpon 100 then ſay if 8 monethes make 100 10. ſh $\frac{36}{125}$ what ſhall 12 moneths conſider that 12 moneth is the 1 of 8 more then 8 and therefore the facit muſt be 1 $\frac{1}{2}$ of 6 $\frac{36}{125}$ more then 6 $\frac{36}{125}$ which is 9 $\frac{54}{125}$ per cento per anno gaine as in example.

HOW

The agreement betweene the measure of London, and the measure of the places following, gathered of those which (I think) have gone nigheſt the truth.

Note that 4 ells at London is 5 yards. 100 ells at London is at

Antwerpe	166⅔ ells	Roane	103 ells
Gant ſhort me:	164 ells	Paris	95 ells
and long me.	154 ells	Lyons	100 ells
Bruges	164 ells	Genua	480⅓ palms
Arras	165 ells	Millan	214 braces
Calice	157 ells	Florence	188 braces
Liſle	166 ells	Venice for ſilk,	196 ells
Maſtricht	173 ells	for linnen, &c.	180 ells
Cullen	208 ells	Rome	56 cana
Francfort	208 ells	Lisbone	100 varas
Noremberge	174 ells	Madera	104 varas
Dantzig	139 ells	Seville	135 varas



For to find the agreement between the ells, yards, varras, braces, palmes, &c. of any two Countreyes, Cities, Townes, &c.

LEarne the order or cuſtome of meaſuring of all ſorts of commodities in both places, then prepare a ſmooth ſtraight board, plate or ſuch like: and draw upon the ſame a ſtraight line of the length of the meaſure in one of the places with his allowance of meaſuring, which for example is A B, then divide the line A B into 4 equall parts in the points C. D. E. and divide the quarter A C into 250 equall parts, and number them from 10 to 10 upward, making the point C the 750 part for the number of parts contained in the other 3 quarters. Then marke upon the line A B the length of the meaſure of the other place with his allowance, which is for example from B to F. being juſt in the 900 part. Therefore 900 of thoſe meaſures of the firſt place make juſt 1000 of thoſe meaſures

measures in the other place. But if the measure of the other place be longer than the measure of the first place, as for example that it were from B to G. then take the distance A G with a compasse, and set the one foot in C. and extend the other toward A. which for example doth come to rest in F being 150 parts from C. Therefore 1150 measures of the first place make just 1000 of the other place, &c.

The agreement betweene the weight of London, and the weight of the places following, gathered of those which (I think) have gone nigheſt the truth.

100 L at London is at

Antwerpe	96 L	Noremberge	90 L
Cullen	90 L	Bruges	90 L
Baſle	90 L	Ausbourgh	95 L
Vlme	96 L	Leipzig	99 L
Preſlau	120 L	Lubec	95 L
Dantzig	116 L	Geneve	81 L
Roane	81 L	Marſeilles	112 L
Rochell	112 L	Paris	91 L
Tholouſe	110 L	Genua	141 L
Lyons	105 L	Millan	141 L
Venice ſmall Weight	151 L	Padoua	132 L
		Parma	136 L
Great Weight	95 L	Ancona	130 L
Ferrara	133 L	Roma	127 L
Florence	131 L	Cicilia	148 L
Naples	142 L	Lisbone ſmall Weight	90 L
Laquilla	143 L	Great Weight	83 L
Caſtile	102 L		
Francfort	90 L		

For to finde the agreement betweene the pound weight of any two Countryes, Cities, Townes. &c.

PRepare a ballance ſo exactly made as is poſsible, that a verie little thing may cauſe them to incline one way and other way. Likewiſe prepare of the one place the iuſt pound, $\frac{1}{2}$ pound, $\frac{1}{4}$ pound, $\frac{1}{8}$ pound, $\frac{1}{16}$ pound, $\frac{1}{32}$ pound, $\frac{1}{64}$ pound, $\frac{1}{128}$ pound, $\frac{1}{256}$ pound, &c. untill you thinke it ſufficient. Then take the iuſt pound weight of the other place & put it in one of the ſcales of your ballance, and in the other ſcale put ſuch weightes of the firſt place that may iuſtly counterpoiſe the pound weight of the other place. As for example take that the $\frac{1}{2}$ pound, $\frac{1}{4}$ pound, $\frac{1}{8}$ pound & $\frac{1}{256}$ pound of the firſt place doth iuſtly counterpoiſe the pound weight of the other place, then 128 pound, 64 pound 32 pound and one pound, that is 225 pound of the firſt place doth iuſtly weigh 256 L of the other place, But if the pound waight of the firſt place be leſſe then the pound weight of the other place, as for example take that the pound $\frac{1}{2}$ pound, $\frac{1}{128}$ pound and $\frac{1}{512}$ pound of the firſt place doth iuſtly counterpoiſe the pound weight of the other place, then 512 L, 64 L 2 L and one pound that is 579 pound of the firſt place doth iuſtly weigh 512 pound of the other place. &c. Thus making an end for this time, I referre that which might be gathered, for the more ſpeedy finding out of the agreement, of meaſures and weights to the diſcretion of the ingenious.

AN EXPLANATION OF THE FORMER RULES OF FRACTIONS,

that the moſt ignorant with a little paines may underſtand: And this I thought good to add to the firſt Booke, becauſe the reſolution of the former Queſtions conſiſts of them.



LONDON,
Printed by GEORGE MILLER dwelling in the Blacke-Friers. M.DC.XXXIV.